State of New Jersey
DEPARTMENT OF TRANSPORTATION

TMC OPERATOR TRAINING COURSE

Statewide Traffic Management Center (STMC), Woodbridge
Traffic Operations Center (TOC) South, Cherry Hill

Prepared By:

ITS Resource Center, New Jersey Institute of Technology

Lead consultant: VHB Inc.

INTRODUCTION AND OVERVIEW

- Who are we?
- Who are you?

Course Outline

MODULE 1 – Course Overview and Expectations (1/2 Hour)

MODULE 2 – Introduction to Traffic Management Centers (2 Hours)

MODULE 3 – Overview of Regional Transportation System (1 1/2 Hours)

MODULE 4 – Incident Management (8 Hours)

MODULE 5 – Emergency Transportation Operations (4 Hours)

MODULE 6 – Traffic Management (4 Hours)

MODULE 7 – Introduction to Software Systems and Technologies (40 Hours)

MODULE 8 – Practical Exercise (3 Hours)

MODULE 9 – Course Review and Next Steps (1 Hour)

MODULE 1

COURSE OVERVIEW AND EXPECTATIONS

Course Overview

The training course explains:

- The role of the Traffic Management Center (TMC) in the regional transportation community and how the TMC delivers its services.
- Important concepts in Traffic Incident Management.
- Day-to-day functions and responsibilities of a TMC Operator to effectively manage incidents and traffic.
- Facilities available at the TMC.

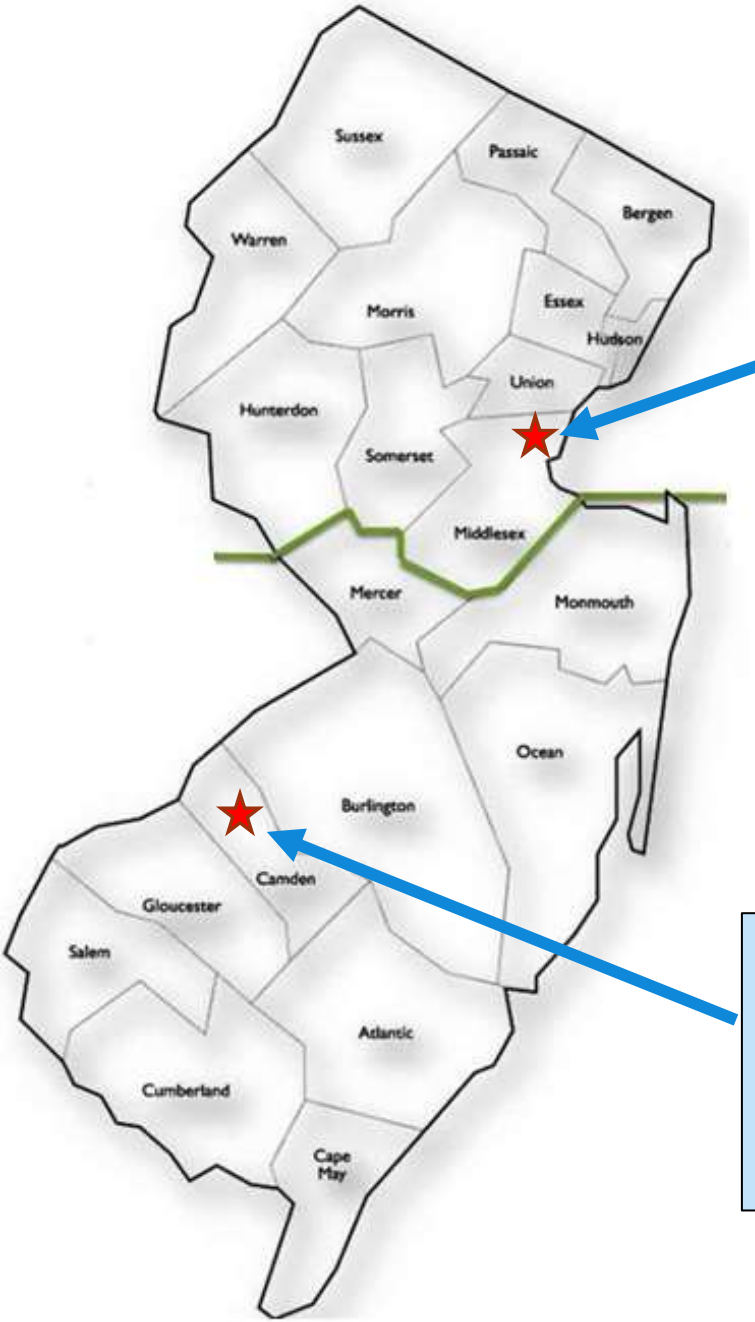
Expectations

After attending this training course the trainee will:

- Become familiar with the departments, facilities, systems, and technologies available at the TMC
- Understand the responsibilities and functions of a TMC Operator
- Understand the steps involved in managing incidents and traffic.

MODULE 2

INTRODUCTION TO TRAFFIC MANAGEMENT CENTERS



Statewide Traffic Management Center (STMC)
Woodbridge, NJ

North Region Coverage:
4:00 AM – 8:30 PM
Statewide Coverage (Both North & South):
8:30 PM – 4:00 AM

Two primary TMCs in the State

Traffic Operations Center South (TOC-S)
Cherry Hill, NJ

South Region Coverage:
Monday-Friday 4:00 AM - 8:30 PM

➢ STMC (24/7 coverage)

- TMC for the northern half of the state
- Provides for evening/weekend/holiday operations coverage for the entire state
- NJDOT is co-located with the New Jersey State Police (NJSP) and the New Jersey Turnpike Authority (NJTA)

➢ TOC- South (Monday – Friday, 4:00 AM – 8:30 PM)

- TMC for the southern half of the state and monitors the Route 29 tunnel
- STMC handles coverage for TOC-S during week nights (after 8:30 pm) and on weekends and holidays

STMC

Current Front Office Staff – STMC

- ***Manager:*** Michael Juliano
- ***Senior Transportation Analyst:*** Vacant
- ***Engineering Technician 1:*** Kevin Hall

Current Front Office Staff – STMC

- ***Manager:*** Michael Juliano

PLACEHOLDER SLIDE FOR PICTURE

Current Front Office Staff – STMC

- ***Senior Transportation Analyst:*** Vacant

PLACEHOLDER FOR PICTURE

Current Front Office Staff – STMC

- ***Engineering Technician 1:*** Kevin Hall

PLACEHOLDER FOR PICTURE

TOC- South

Current Front Office Staff – TOC-South

- ***Manager:*** William Day
- ***Senior Transportation Analyst:*** Vacant
- ***Engineering Technician 1:*** Dennis Caltagirone

Current Front Office Staff – TOC-South

- ***Manager:*** William Day

PLACEHOLDER SLIDE FOR PICTURE

Current Front Office Staff – TOC-South

- ***Senior Transportation Analyst:*** Vacant

PLACEHOLDER FOR PICTURE

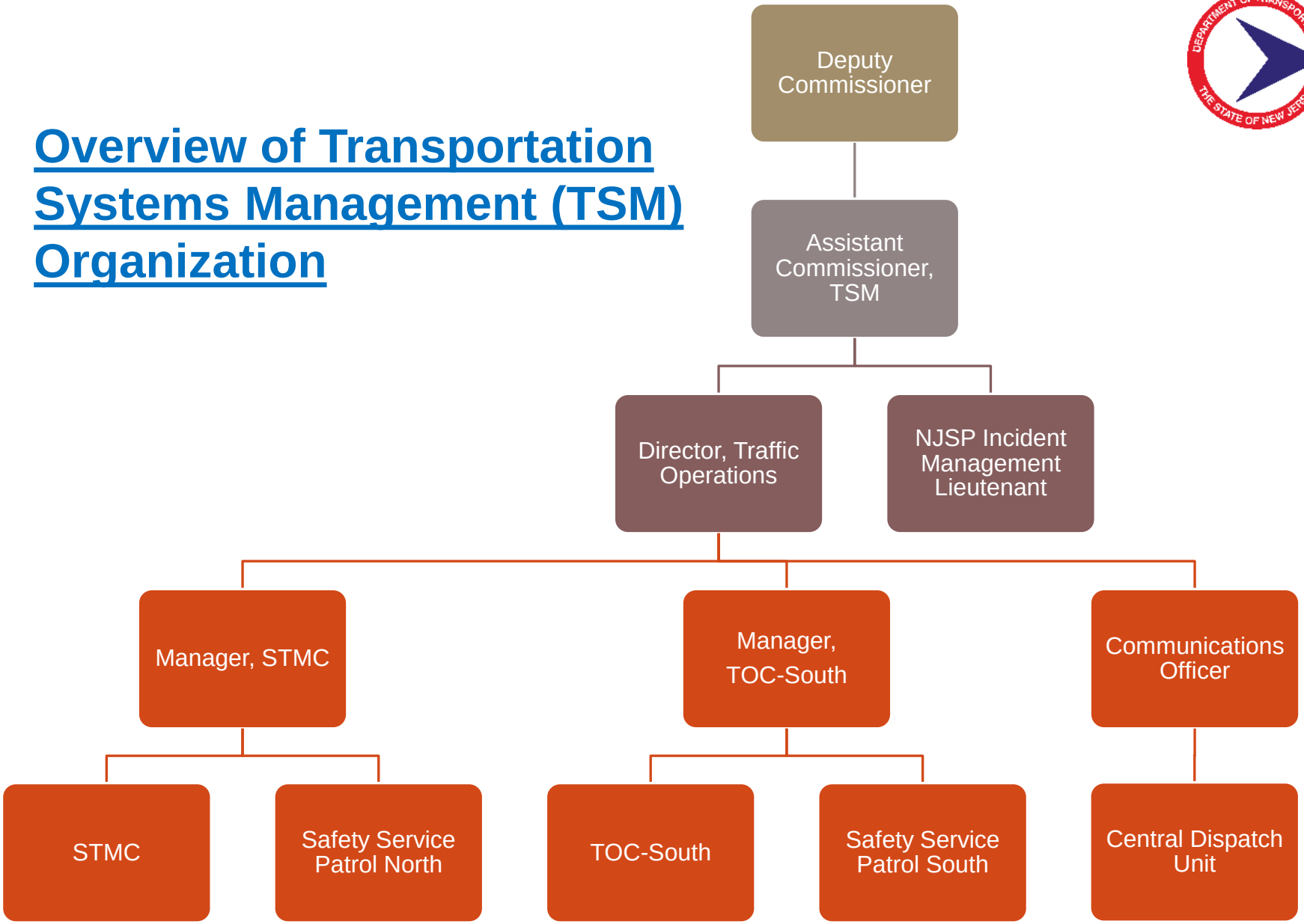
Current Front Office Staff – TOC-South

- ***Engineering Technician 1:*** Dennis Caltagirone

TMC Operator Basics

- NJDOT/TSM Organization
- DOT Intranet
- ECATS
  - NJDOT Time Sheet Preparation Manual
- Phone Etiquette
- Workstations
- Equipment Checks

Overview of Transportation Systems Management (TSM) Organization



Key Management Personnel

- ***Deputy Commissioner:*** Joseph D. Bertoni

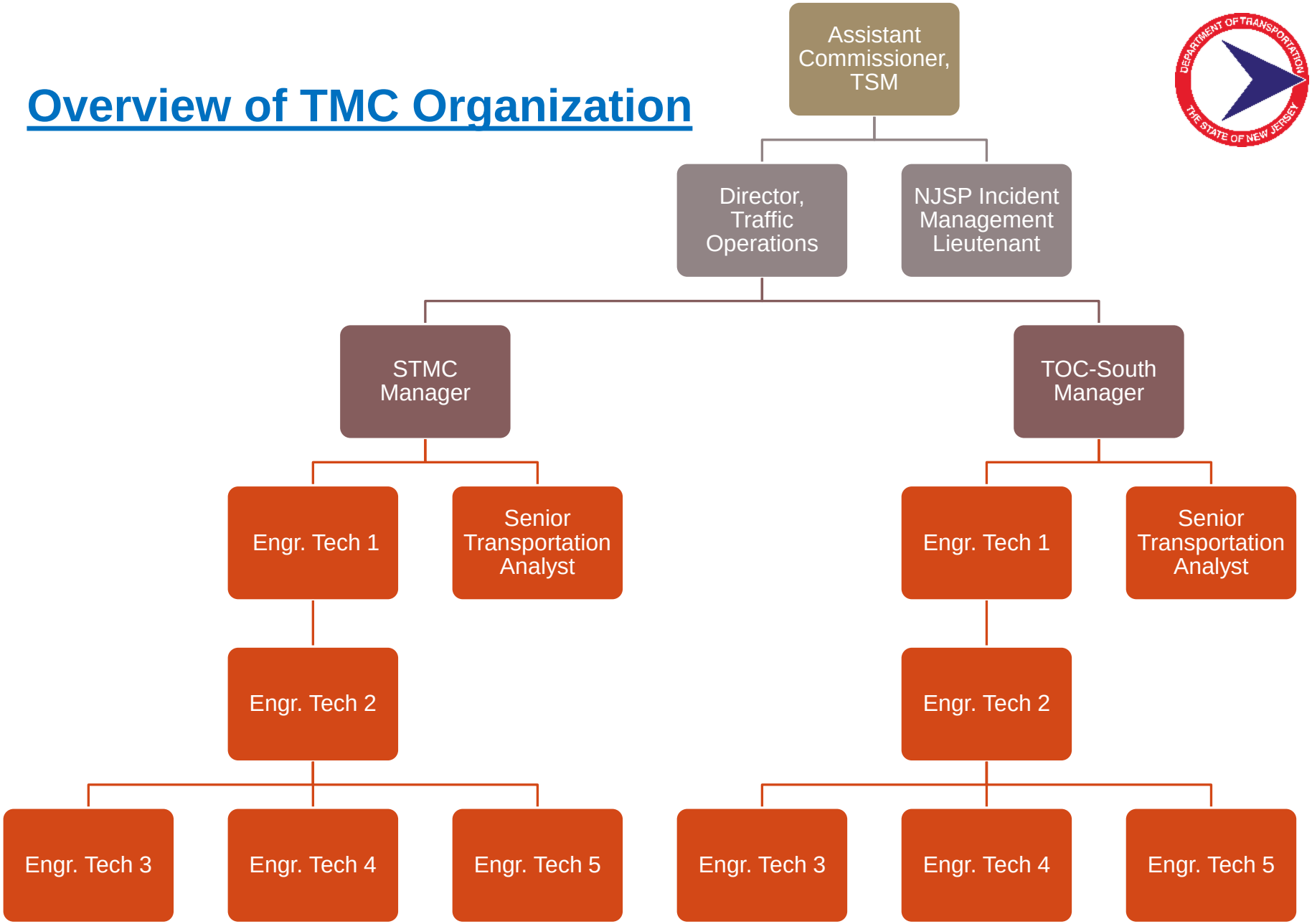
Key Management Personnel

- ***Assistant Commissioner, TSM:*** C. William (Bill) Kingsland

Key Management Personnel

- ***Director, Traffic Operations:*** Sal Cowan

Overview of TMC Organization



TMC Staff Positions and Responsibilities

Manager, STMC/TOC-South

- Oversees Senior Transportation Analyst, Safety Service Patrol, and all TMC staff.
- Ensures that the TMC is properly staffed especially during special events, high profile construction, and emergencies.
- Responsible for the smooth operation of the TMC facility.
- Responds to inquiries about the TMC's operation as directed by NJDOT.

TMC Staff Positions and Responsibilities

Senior Transportation Analyst

- Serves as the Regional Incident Management Coordinator (RIMC).
- Coordinates Safety Service Patrol resources including vehicles and equipment for special events.
- Coordinates training of TMC staff.
- Facilitates outreach with NJSP and other responders.
- Responsible for coordination of special events.
  - Manages resources with other agencies.
  - Develops Traffic Management Plans (TMPs).

TMC Staff Positions and Responsibilities

Engineering Technician 1

- Is a senior level position responsible for ensuring all operators are adequately trained and current in all tasks relevant to their position.
- Supervises Engineering Tech 2s.
- Responsible for timesheets and reviews overtime.
- Oversees the TMC schedule to ensure the proper use of overtime lists.
- Serves as a liaison to the Manager for identifying problems and/or weaknesses in TMC functionality.
- Prepares and maintains training documents and reports.

TMC Staff Positions and Responsibilities

Engineering Technician 2

- Is a senior level supervisor who has the responsibility for coordinating traffic and incident management functions in the TMC.
- Serves as the point person for information about ongoing incidents, interagency coordination, resource activations, email notifications, etc.
- Responsible for ensuring that operators on the same shift are adequately trained and current in all tasks relevant to their position.
- Serves as the shift liaison to the TMC Manager and Engineering Technician 1.
- Responsible for shift continuity, assessments and briefings between shift personnel.

TMC Staff Positions and Responsibilities

Operator (Engineering Technician - 3, - 4, - 5)

- Monitors, detects, notifies, and manages incidents.
- Generates and displays traffic related messages.
- Interacts with maintenance and technical personnel on system performance.
- Reports major incidents, full closures, and escalation of incident information to management/front office/communications.
- Responsible for inter/intra agency coordination to ensure accuracy and timeliness of information.
- Ensures transfer of information to the next shift is complete and accurate.

Primary Operator Job Functions

- Monitor traffic conditions and ongoing data events (construction, special events, etc.) using any and all available resources
- Detect incidents
- Notify appropriate responders to the incident
- Manage resources for the incident including personnel equipment and information
- Daily operational equipment inspections
- Communicate to the public

Operations Bulletins (OB)

- OBs are operational procedures that must be followed by employees. They cover a range of subjects from administrative actions to operational measures.
- Can be found through *OpenReach* and *NJDOT Intranet*
- Failure to abide by the OBs may result in employee discipline

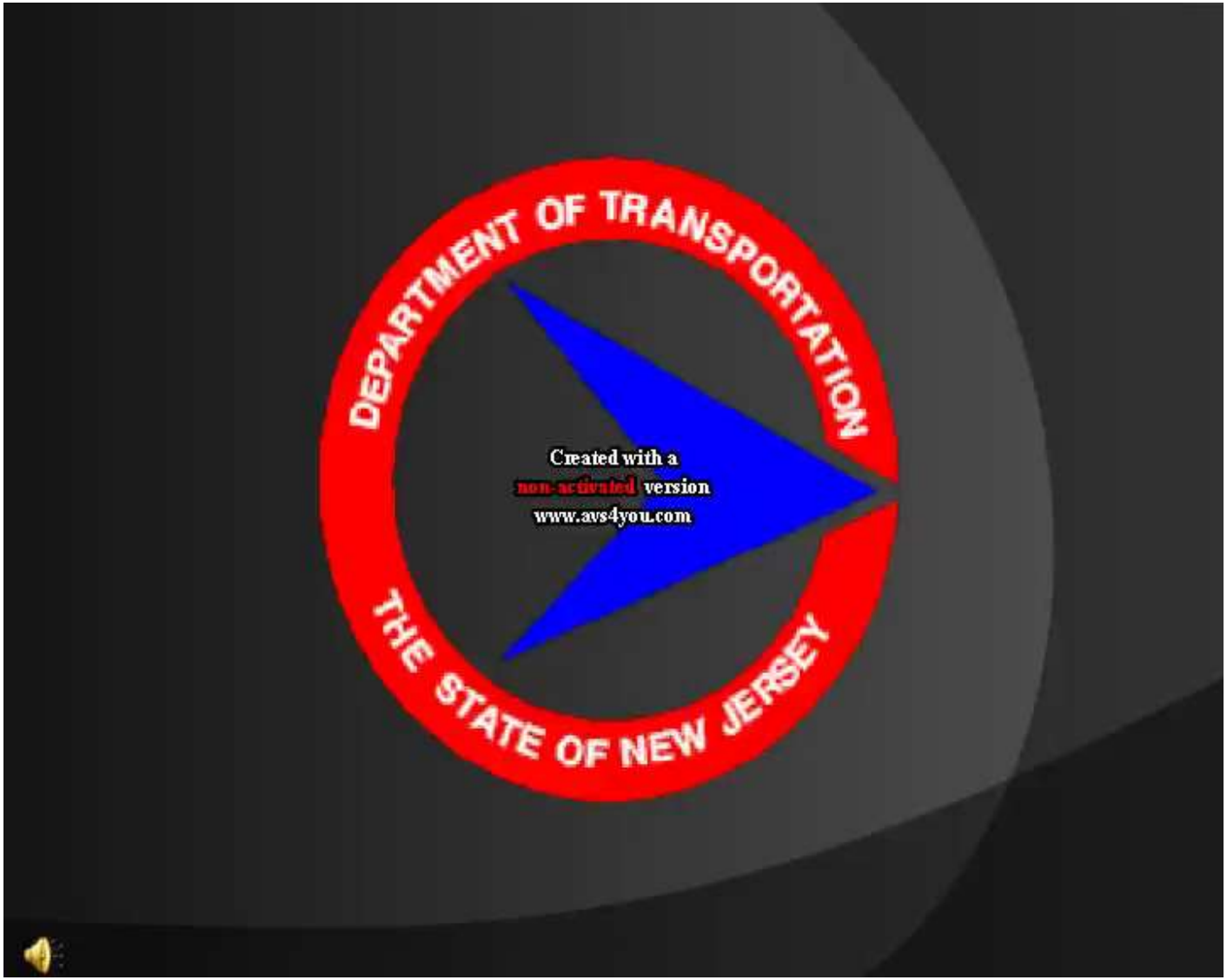
Key OBs Addressed in this Course

- **OB1002C** NJDOT Video Camera Operations Policy
- **OB1003B** Operations, IMRT, and Duty Officer Contact Procedure (Non-Business Hours)
  - Appendix A: When to contact the Regional Director
  - Appendix B: When to contact the Director of Traffic Operations
  - Appendix C: When to contact the Assistant Commissioner, TSM
  - Appendix D: List of Incidents that may require an IMRT Response
- **OB1004C** AMBER and Silver Alert Procedure
- **OB2002C** ITS Maintenance Personnel Emergency Call Out Procedure
- **OB4001B** Weather Monitoring and Notification Procedure

Key OBs Addressed in this Course

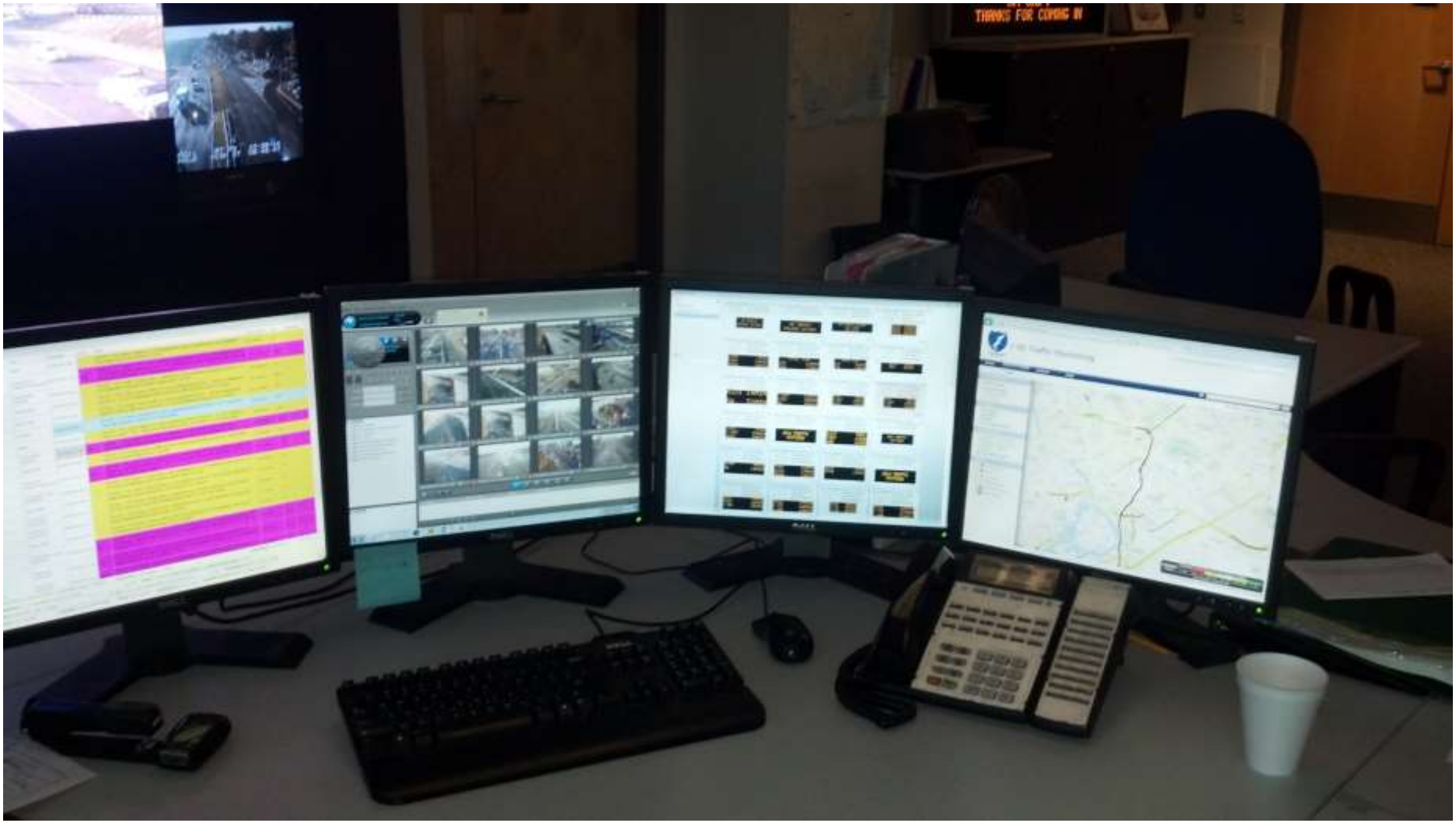
- **OB5001C** Unanticipated Construction Delays
  - Attachment A: Unanticipated Construction Delay of 30 minutes or more Cheat Sheet for TOC Staff
  - Attachment B: Unanticipated Construction Delay Checklist
- **OB5003C** Transit Delays Advisory
- **OB5005C** Traffic Alerts
- **OB5006B** PATH Train Delays Advisories
- **OB5007B** TOC South Staffing Plan
- **OB5008B** TOC North Staffing Plan
- **OB5010C** Uniform Procedure for NJDOT Employees working on the Operations Floor

NJDOT Phone Etiquette Video



TOC- North

TOC- South



Traffic Operations Regional Readiness Reporting Daily Log

- Daily equipment inspection log is found on the DOT Intranet
- Checklist typically starts between 12AM and 4AM each day
  - STEP 1 – Adding a daily inspection readiness log
  - STEP 2 – Operators inspect and record results for each device (North and South)
  - STEP 3 – ITS Engineers review the issues found during inspection – sign-off
  - STEP 4 – At least 1 Manager (North or South) signs off
  - STEP 5 – ITS Managers generate resulting work orders
  - STEP 6 – Daily Statistics Report is sent to Director

Opera | Traffic Operations - Re... | Web | njdotintranetcr.dot.state.nj.us/Applications/traffic_ops/reg_survey/dashboard/to_reg_survey_daily_log_100.asp | Search with Google

• Employee Intranet • NJDOT Internet • NJHome • Feedback | Search

new jersey department of transportation

Employee Intranet

// Home / Div... / IT / App. Dev. / Client Applications

Personal
- Application Login
- Personal Programs

Daily Log Menu
- Refresh Form
- On-Line Help

Quick Reports
- Current Device Listing

Reporting
- Rpt - Daily Log Details Reporting
- Rpt - Work Orders Reporting

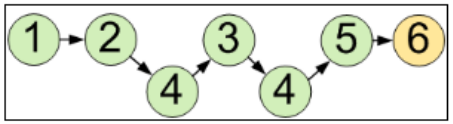
Utilities
- Forgot Password
- New Account
- General Procedures
- User Guides
- Calculator
- Index Server
- FAQ

Traffic Operations Regional Readiness Reporting Daily Log

Dashboard | Daily Log | Work Orders

Production - Welcome to the Traffic Operations - Regional Readiness Reporting Manager - Daily Log

Daily Statistics Report can now be sent out by Managers (N&S).



Welcome to the Traffic Operations - Region Readiness Inspection Log Manager. This area encompasses the day to day readiness inspection effort for all of the devices owned and maintained by the NJDOT.

The day-to-day effort includes the following 6 steps:

1. STEP 1 - Adding a Daily Inspection Readiness Log.
   (Whoever creates the Daily Inspection Log for the day, creates the Log for both the North and the South.)
2. STEP 2 - Operators Inspection and recording results for each Device (North and South Regions)
   (Once Operators have completed Inspection - Operators Signatures are required to inform Supervisors and complete this step)
   (Once Operators have signed off then Operator Supervisors must sign off to inform ITS Engineers and complete this step)
3. STEP 3 - ITS Engineers Review the Issues found during Inspection (North and South Regions)
   (Once ITS Engineers have completed review of Issues - ITS Engineers Signatures are required to inform Managers and complete this step)
4. STEP 4 - This is the signatures area for all steps in the process.
   (Until at least 1 Manager signs this Daily Log (either N or S) Generation of Work Orders and Stat Reports will not go out.)
5. STEP 5 - ITS Managers generate resulting work orders (North and South).
   (Once Work Orders are generated, the Daily Log for this day will become View Only.)
6. STEP 6 - Daily Statistics Report Can be Sent.
   (Once Work Orders are generated, the Daily Statistics report must be sent out.)

Managing the Work Orders is done on the Work Orders Tab.

Daily Readiness KPI Report (01/07/2015)

Overall Device Health (N)

Overall Device Health (S)

Overall Device Health (T)

Overall Device Health					
Device Type	Region	Total Count	Issues	Deficient %	Functional %
All Devices	N	437	*31*	7.094	92.906
All Devices	S	296	*16*	5.405	94.595
All Devices	T	733	*47*	6.412	93.588

CCTV (N)

CCTV (S)

CCTV (T)

CCTV Device Health					
Device Type	Region	Total Count	Issues	Deficient %	Functional %
CCTV	N	228	*21*	9.211	90.789
CCTV	S	149	*8*	5.369	94.631
CCTV	T	377	*29*	7.692	92.308

DMS (N)

DMS (S)

DMS (T)

DMS Device Health					
Device Type	Region	Total Count	Issues	Deficient %	Functional %
DMS (N)	N	102	*2*	1.961	98.039
DMS (S)	S	66	0	0	100
DMS (T)	T	168	*2*	1.19	98.81

Mobility Management Contact List

- ITS Maintenance Call Out List – Emergency call-out procedure primary and secondary contacts schedule
  - North
  - South
- **Operations Bulletin 2002C** ITS Maintenance Personnel Emergency Call Out Procedure
  - Procedure for ITS equipment damaged or becomes inoperable during non-business hours.
  - On an emergency basis under certain conditions as specified in this OB, ITS Maintenance Personnel should be notified to respond to the problem.

TRAFFIC OPERATIONS NORTH 2014

ITS MAINTENANCE-EMERGENCY CALL-OUT PROCEDURE

CHANGE OCCURS AT 4 PM FRIDAY

DATE	PRIMARY	SECONDARY	DATE	PRIMARY
January 3, 2014	JOHN GAZO	WALLY NUNEZ	July 4, 2014	WALLY NUNEZ
January 10, 2014	ALAN HUDSON	PAUL LYNYAK	July 11, 2014	PAUL LYNYAK
January 17, 2014	WALLY NUNEZ	JOHN GAZO	July 18, 2014	JOHN GAZO
January 24, 2014	PAUL LYNYAK	ALAN HUDSON	July 25, 2014	ALAN HUDSON
January 31, 2014	JOHN GAZO	WALLY NUNEZ	August 1, 2014	WALLY NUNEZ
February 7, 2014	ALAN HUDSON	PAUL LYNYAK	August 8, 2014	PAUL LYNYAK
February 14, 2014	WALLY NUNEZ	JOHN GAZO	August 15, 2014	JOHN GAZO
February 21, 2014	PAUL LYNYAK	ALAN HUDSON	August 22, 2014	ALAN HUDSON
February 28, 2014	JOHN GAZO	WALLY NUNEZ	August 29, 2014	WALLY NUNEZ
March 7, 2014	ALAN HUDSON	PAUL LYNYAK	September 5, 2014	PAUL LYNYAK
March 14, 2014	WALLY NUNEZ	JOHN GAZO	September 12, 2014	JOHN GAZO
March 21, 2014	PAUL LYNYAK	ALAN HUDSON	September 19, 2014	ALAN HUDSON
March 28, 2014	JOHN GAZO	WALLY NUNEZ	September 26, 2014	WALLY NUNEZ
April 4, 2014	ALAN HUDSON	PAUL LYNYAK	October 3, 2014	PAUL LYNYAK
April 11, 2014	WALLY NUNEZ	JOHN GAZO	October 10, 2014	JOHN GAZO
April 18, 2014	PAUL LYNYAK	ALAN HUDSON	October 17, 2014	ALAN HUDSON
April 25, 2014	JOHN GAZO	WALLY NUNEZ	October 24, 2014	WALLY NUNEZ
May 2, 2014	ALAN HUDSON	PAUL LYNYAK	October 31, 2014	PAUL LYNYAK
May 9, 2014	WALLY NUNEZ	JOHN GAZO	November 7, 2014	JOHN GAZO
May 16, 2014	PAUL LYNYAK	ALAN HUDSON	November 14, 2014	ALAN HUDSON
May 23, 2014	JOHN GAZO	WALLY NUNEZ	November 21, 2014	WALLY NUNEZ
May 30, 2014	ALAN HUDSON	PAUL LYNYAK	November 28, 2014	PAUL LYNYAK
June 6, 2013	WALLY NUNEZ	JOHN GAZO	December 5, 2014	JOHN GAZO
June 13, 2014	PAUL LYNYAK	ALAN HUDSON	December 12, 2014	ALAN HUDSON
June 20, 2014	JOHN GAZO	WALLY NUNEZ	December 19, 2014	WALLY NUNEZ
June 27, 2014	ALAN HUDSON	PAUL LYNYAK	December 26, 2014	PAUL LYNYAK
			January 2, 2015	JOHN GAZO

LL PRIMARY # FIRST.IF NO RESPONSE CALL SECONDARY # .MESSAGE NOT RETURNED IN 15 MIN.CAL CONTACT. IF THE SECONDARY CONTACT CANNOT BE REACHED, CALL MIKE SCHUTZ , TIM BOURNE T PILSBURY IN THAT ORDER

NAME	PRIMARY	SECONDARY
WALLY NUNEZ	(732) 496-9434	(201) 238-3035
PAUL LYNYAK	(201) 726-8135	(201) 726-8135
MIKE SCHUTZ	(609) 358-1793	(732) 940-0295
ALAN HUDSON	(609) 658-8535	(201) 790-2112
JOHN GAZO	(609) 731-0778	(551) 404-5692
STEVE WSZOLEK	(856) 433-0242	(973) 296-7678
TIM BOURNE	(732) 988-7484	(732) 496-9426
MIKE PILSBURY	(201) 439-0092	(732) 496-9418
ADESTA 0800-1700	908-756-1181	AFTER HRS/HOLIDAY 1-877-637-2344

ADESTA LIMITS OF COVERAGE ON NJDOT MARK-OUT WEB SITE

MARKOUTS-	www.state.nj.us/transportation/eng/elec/ITS/requests.shtm
HUB ACCESS:	www.state.nj.us/transportation/eng/elec/ITS/access.shtm

MOBILITY MANAGEMENT SOUTH I.T.S. 2014

ITS MAINTENANCE-EMERGENCY CALL-OUT PROCEDURE **CHANGE OCCURS AT 4 PM FRIDAY**

NJDOT FIBER MARK-OUT http://www.state.nj.us/transportation/business/before_you_dig/

DATE	PRIMARY	SECONDARY	DATE	PRIMARY	SECONDARY
DECEMBER 27,2013	LOU RANSON	KEITH KIRBY	JULY 04,2014	BRYAN KEPLER	LOU RANSON
JANUARY 3,2014	KEITH KIRBY	BILL BRANTLEY	JULY 11,2014	LOU RANSON	KEITH KIRBY
JANUARY 10,2014	BILL BRANTLEY	BRYAN KEPLER	JULY 18,2014	KEITH KIRBY	BILL BRANTLEY
JANUARY 17,2014	BRYAN KEPLER	LOU RANSON	JULY 25,2014	BILL BRANTLEY	BRYAN KEPLER
JANUARY 24,2014	LOU RANSON	KEITH KIRBY	AUGUST 01,2014	BRYAN KEPLER	LOU RANSON
JANUARY 31,2014	KEITH KIRBY	BILL BRANTLEY	AUGUST 08,2014	LOU RANSON	KEITH KIRBY
FEBRUARY 7,2014	BILL BRANTLEY	BRYAN KEPLER	AUGUST 15,2014	KEITH KIRBY	BILL BRANTLEY
FEBRUARY14,2014	BRYAN KEPLER	LOU RANSON	AUGUST 22,2014	BILL BRANTLEY	BRYAN KEPLER
FEBRUARY 21,2014	LOU RANSON	KEITH KIRBY	AUGUST 29 ,2014	BRYAN KEPLER	LOU RANSON
FEBRUARY 28,2014	KEITH KIRBY	BILL BRANTLEY	SEPTEMBER 05,2014	LOU RANSON	KEITH KIRBY
MARCH 07,2014	BILL BRANTLEY	BRYAN KEPLER	SEPTEMBER 12,2014	KEITH KIRBY	BILL BRANTLEY
MARCH 14,2014	BRYAN KEPLER	LOU RANSON	SEPTEMBER 19,2014	BILL BRANTLEY	BRYAN KEPLER
MARCH 21,2014	LOU RANSON	KEITH KIRBY	SEPTEMBER 26,2014	BRYAN KEPLER	LOU RANSON
MARCH 28,2014	KEITH KIRBY	BILL BRANTLEY	OCTOBER 03,2014	LOU RANSON	KEITH KIRBY
APRIL 04,2014	BILL BRANTLEY	BRYAN KEPLER	OCTOBER 10,2014	KEITH KIRBY	BILL BRANTLEY
APRIL 11,2014	BRYAN KEPLER	LOU RANSON	OCTOBER 17,2014	BILL BRANTLEY	BRYAN KEPLER
APRIL 18,2014	LOU RANSON	KEITH KIRBY	OCTOBER 24,2014	BRYAN KEPLER	LOU RANSON
APRIL 25,2014	KEITH KIRBY	BILL BRANTLEY	OCTOBER 31,2014	LOU RANSON	KEITH KIRBY
MAY 02,2014	BILL BRANTLEY	BRYAN KEPLER	NOVEMBER 07,2014	KEITH KIRBY	BILL BRANTLEY
MAY 09,2014	BRYAN KEPLER	LOU RANSON	NOVEMBER 14,2014	BILL BRANTLEY	BRYAN KEPLER
MAY16,2014	LOU RANSON	KEITH KIRBY	NOVEMBER 21,2014	BRYAN KEPLER	LOU RANSON
MAY 23,2014	KEITH KIRBY	BILL BRANTLEY	NOVEMBER 28,2014	LOU RANSON	KEITH KIRBY
MAY 30,2014	BILL BRANTLEY	BRYAN KEPLER	DECEMBER 05,2014	KEITH KIRBY	BILL BRANTLEY
JUNE 06,2014	BRYAN KEPLER	LOU RANSON	DECEMBER 12,2014	BILL BRANTLEY	BRYAN KEPLER
JUNE 13,2014	LOU RANSON	KEITH KIRBY	DECEMBER 19,2014	BRYAN KEPLER	LOU RANSON
JUNE 20,2014	KEITH KIRBY	BILL BRANTLEY	DECEMBER 26,2014	LOU RANSON	KEITH KIRBY
JUNE 27,2014	BILL BRANTLEY	BRYAN KEPLER	JANUARY 2,2015	KEITH KIRBY	BILL BRANTLEY

CALL PRIMARY # FIRST.IF NO RESPONSE CALL SECONDARY # .MESSAGE NOT RETURNED IN 15 MIN.CALL SECONDARY TECH

IF NO ANSWER FOR CALLOUT PLEASE CALL MARK RENNER OR BILL BRANTLEY FOR RESPONSE

NAME	PRIMARY	SECONDARY	CALL #	OFFICE
MARK RENNER	856-433-0280	856-629-7203	73	856-486-6095
BILL BRANTLEY	609-658-9497	856-315-9135	730	856-486-6807
LOU RANSON	609-731-6152	856-691-1209	7301	856-486-6704
KEITH KIRBY	856-433-0282	856-829-1758	7303	856-486-6706
BRYAN KEPLER	856-433-0279	856-768-0493	7305	856-486-6705
DAN DOYLE	732-496-9432	609-670-0356	PRIMARY CALL PORTABLE ITS DEVICES	856-486-6094
G4S TECH -0800-1700	908-756-1181	AFTER HRS/HOLIDAY	1-877-637-2344	LIMITS of COVEREGE ON DOT WEB SITE

EMERGENCY NETWORK ISSUES IT SUPPORT 609-530-3630/ 1-800-622-4357 PRESS "0"

TMC Functions

- Traffic Incident Management
- Traffic Management
- Emergency Management
- Dissemination of Traveler Information
- Other Operations Support

What is an incident?

Traffic Incidents

Traffic incidents can be defined as non-recurring event that causes a reduction of roadway capacity due to motor vehicle crashes, vehicle fires, natural disaster, or other unplanned event that affects or impedes the normal flow of traffic. A goal of the TMC is to quickly and effectively clear the incidents through incident detection.

Primary Functions of the TMC

- ***Traffic Incident Management***

  TIM consists of a planned and coordinated multidisciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. Effective TIM reduces the duration and impacts of traffic incidents and improves the safety of motorists, crash victims, and emergency responders.

- ***Traffic Management***

  Traffic management deals with optimization of traffic flows on the region's major roadways. The TMC continuously monitors and evaluates traffic flows to identify problems and implements appropriate operational strategies to manage traffic.

Primary Functions of the TMC

- ***Emergency Management***

  Emergency Management involves coordinating the response of emergency service providers (such as, police, fire, EMS, transportation agencies, and towing agencies) to emergency conditions (such as, incidents, disabled vehicles, natural disasters, and signal malfunctions).

- ***Dissemination of Traveler Information***

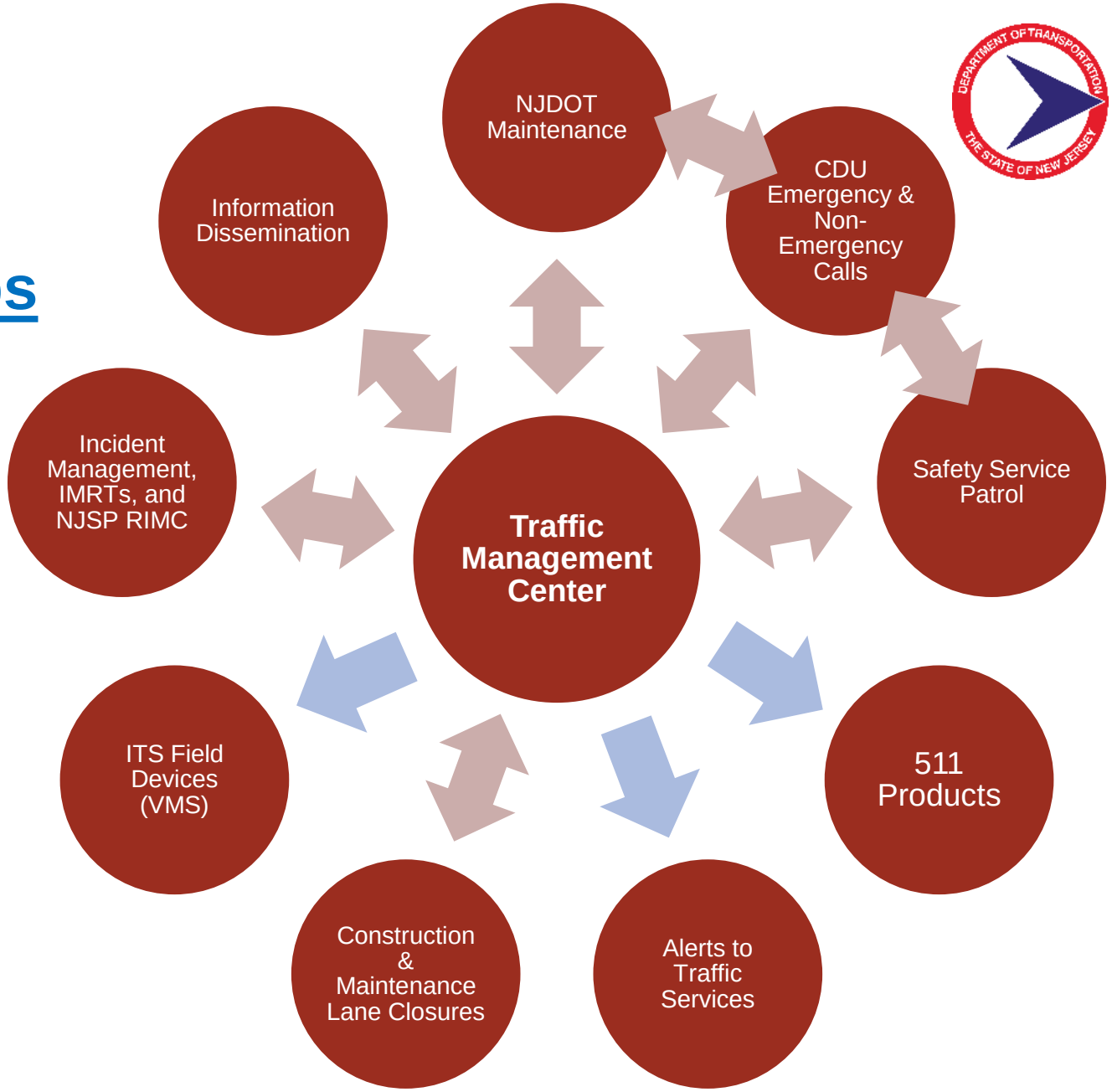
  Real-time traveler information is information that allows motorists to choose the most efficient mode and route to their final destination. The TMC disseminates traveler information through various means, including Variable Message Sign (VMS) and Internet; NDJOT also provides information to Radio and Television.

Primary Functions of the TMC

- ***Other Operations Support***

  Other Operations Support deals with functions the TMC does to support other entities in NJDOT, such as, Safety Service Patrol, Central Dispatch Unit, maintenance, etc.

TMC Relationships



TMC Partners

- New Jersey State Police (NJSP)
- Incident Management Response Teams (IMRT)
- Safety Service Patrol (SSP)
- Central Dispatch Unit (CDU)
- TRANSCOM
- NJDOT Maintenance
- Capital Program Management (CPM)
- Other TMCs in the state
- Other State DOTs
- Transportation Authorities

Incident Management Response Team (IMRT)/New Jersey State Police (NJSP)

- Partnership between NJSP and NJDOT since 1996, added partnership with New Jersey Division of Fire Safety (NJDFS) in 2004.
- Consists of specially trained personnel that respond to major incidents, expediting coordinated multi-agency response efforts.
- 7 Troopers or Regional Incident Management Coordinators (RIMC), 4 NJDFS, & 16 NJDOT Members
- The NJSP Incident Management Unit (IMU) serves as a member of IMRT and participates in statewide TIM initiatives.

Safety Service Patrol (SSP)

- Specialized vehicles continuously patrolling 230 miles on major freeway facilities.
- Provide full MUTCD safety for first responders (equipped with cones, signs, arrow boards, variable message signs, tools, etc.)
- Provide incident information to the TMC.
- Provide quick clearance by moving vehicles and other objects from the travel lanes, increasing both safety and mobility on the roadway.

- When possible, provide advanced warning so motorists may slow down when approaching an incident.

Central Dispatch Unit (CDU)

- The 24/7 CDU is NJDOT's Emergency Call Center.
- Handle all emergency calls requiring NJDOT resources.
- Dispatches the appropriate staff to emergencies including traffic signal malfunctions, debris or trees in the roadway, structural or roadway failures, severe weather, etc.

TRANSCOM
Information Clearing House

- The OpenReach software platform is utilized by a coalition of 16 public safety and transportation agencies in New Jersey, Connecticut, and New York. Transcom provides interagency communication and enhanced utilization of agency resources through the OpenReach program*

- New Jersey implementation of the OpenReach program was the first instance of OpenReach to be deployed and has been stable in its operation since 2011*

http://www.covalsystems.com/latest/about/customers.html

NJDOT Maintenance

- Maintenance can be dispatched on ALL state-owned roadways, even rural roadways.
- Should be requested for major incidents that may last for over 2 hours.
- Provides a complete, construction-type safety set-up, including advanced warning.
- Brings equipment including loaders, sweepers, light towers, plows, sand trucks, salt trucks, and material to patch damaged roadways.
- Provide extra personnel that can assist with incident activities on scene.

Capital Program Management

- Capital Program Documents are used by the New Jersey Department of Transportation to allocate funds. The Capital Program, Investment Strategy and Statewide Transportation Improvement Program are also included in the Capital Program area.
  - Major construction projects
  - Majority of Lane Closure Requests (LCR)

Other TMCs in the State

- Burlington County TMC
- City of Newark, Division of Traffic and Signals
- PANYNJ AOC & EOC
- Others
  - PATH
  - NJ Transit
  - Port Authority Transit Corporation (PATCO)

Burlington County TMC

- Operating hours are 6 AM to 6 PM Monday-Friday
  - Staffed by 2 people
- 1 person for AM shift and 1 person for PM shift.
- Manages traffic operations on all county roadways.
- Manages 4 VMS signs (2 in design/construction)
- Manages about 400 cameras (about 80 stand-alone CCTVs and about 320 AUTOSCOPE cameras for signalized intersections)
- Manages about 300 signalized intersections (about 130 signals on centralized system)

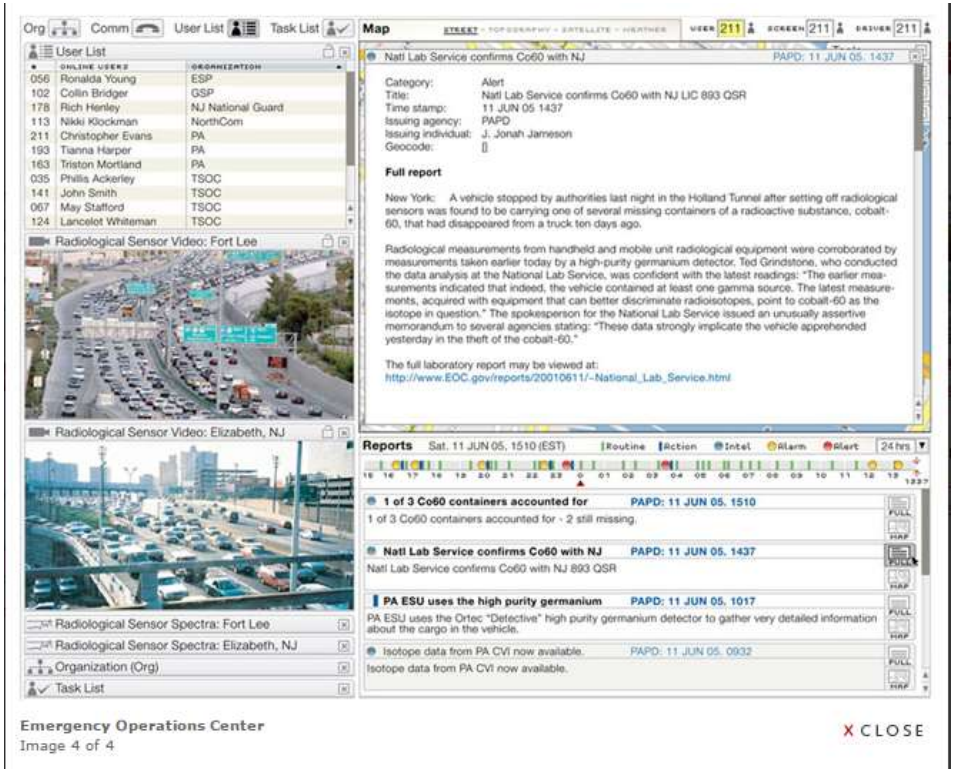
City of Newark,
Traffic & Signals Department

- Provides comprehensive planning, construction and maintenance of Newark's transportation infrastructure

PANYNJ

Agency-wide Operations Center (AOC) & Emergency Operations Center (EOC)

- Provides advanced collaboration and monitoring of the New York and New Jersey region airports, ports, and roadways.
- Integrates a vast network of satellite offices, sensors, and alert and reporting systems for use by emergency responders.



Other Surrounding State DOTs

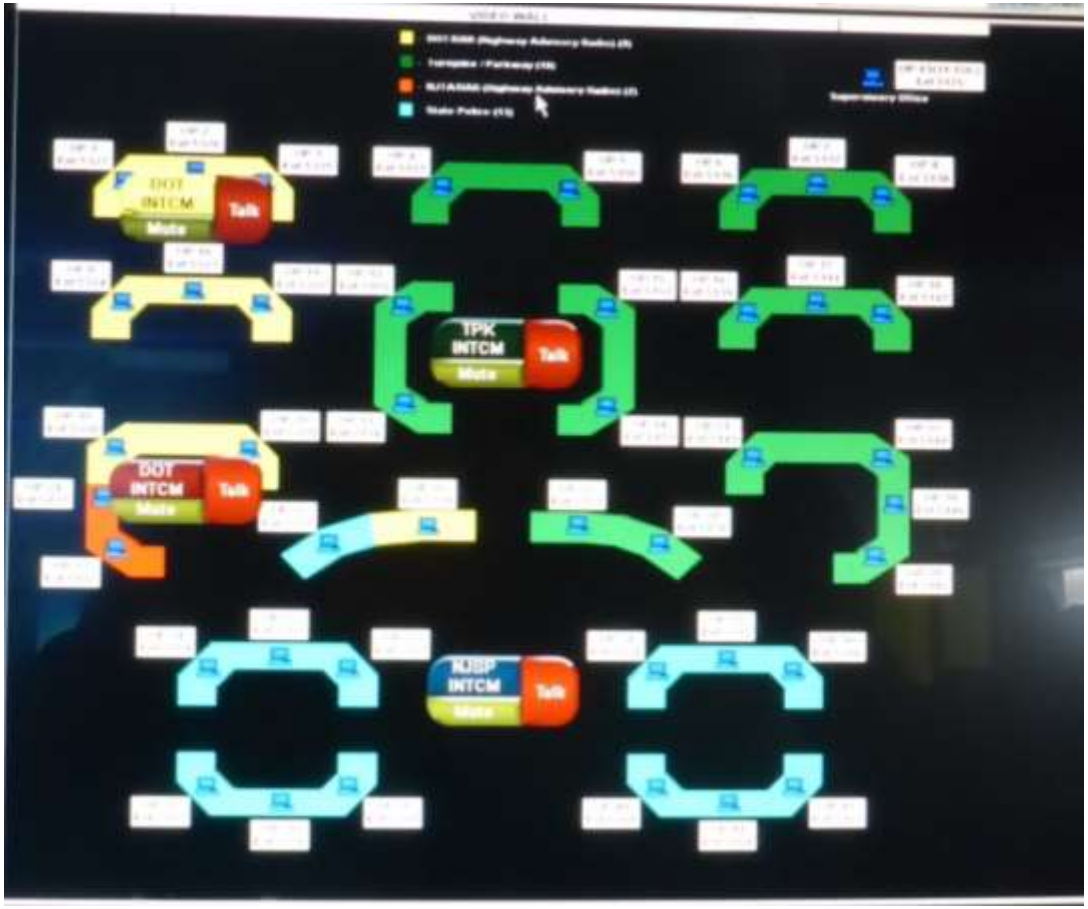
- New York State Department of Transportation (NYSDOT)
- Pennsylvania Department of Transportation (PennDOT)
- Connecticut Department of Transportation (ConnDOT)
- Delaware Department of Transportation (DelDOT)

Transportation Authorities

- Port Authority of NY & NJ (PANYNJ)
- New Jersey Transit (NJT)
- New Jersey Turnpike Authority (NJTA)
- South Jersey Transportation Authority (SJTA)
- Delaware River & Bay Authority (DRBA)
- Delaware River Port Authority (DRPA)
- Delaware River Joint Toll Bridge Commission (DRJTBC)
- Transportation Operations Coordinating Committee (TRANSCOM)

Facilities at STMC

- A tour of the STMC facility
- Meet other operators



Facilities at TOC-South

- A tour of the TOC-South facility
- Meet other operators

Placeholder for TOC-South Layout

Module 2 Learning Checks

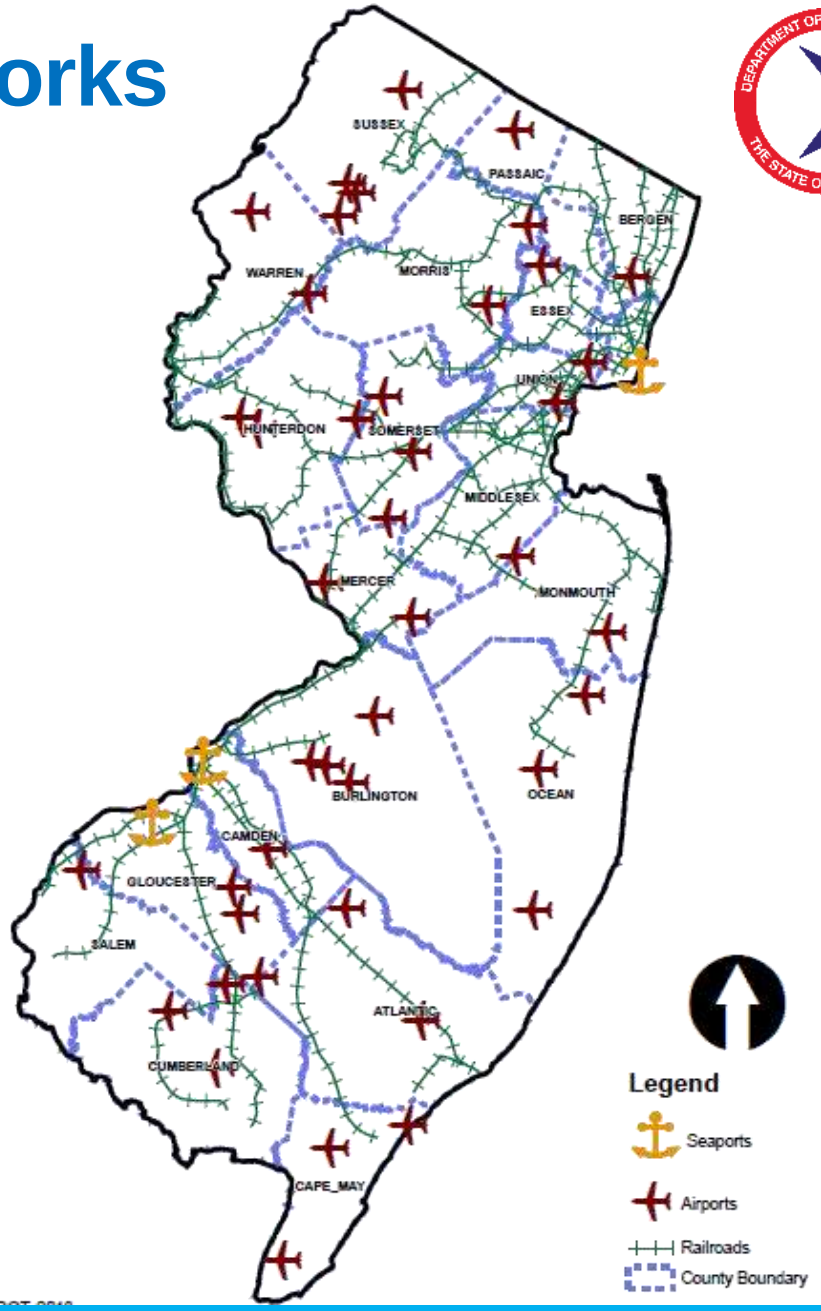
1. Have you learned about the key personnel in the TMC and the available facilities at the TMC including information about their location and access?
2. Have you learned about the partner agencies of the TMC?
3. Do you understand how the TMC coordinates with its internal partners?
4. Do you understand operational procedures and policies to be followed?
5. Have you attended a guided tour to get familiarized with the TMC?
6. Do you understand the role(s) of the TMC?

MODULE 3

OVERVIEW OF NEW JERSEY TRANSPORTATION SYSTEM

Transportation Networks within the State

- It is important for the operator to be knowledgeable of all modes of the transportation network within the State.
- These modes include:
  - Road transportation
  - Rail transportation
  - Maritime transportation
  - Air transportation



Transportation Modes

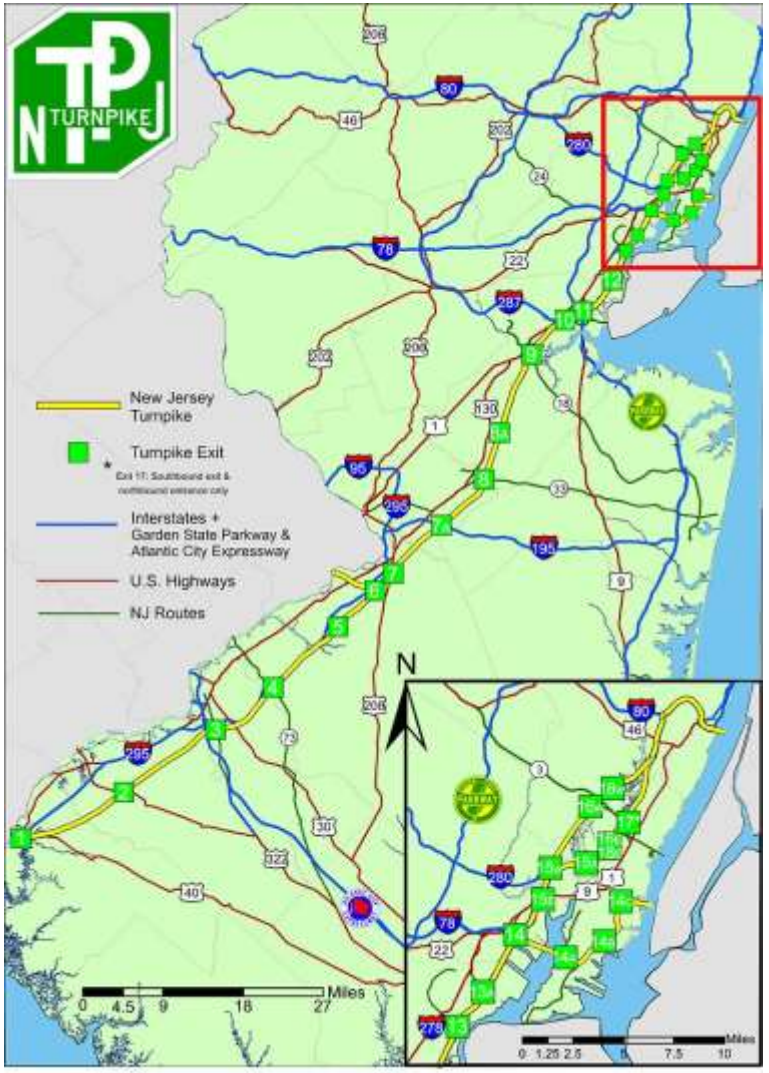
- **Road transportation**
  - Automobile/Car
  - Bus
  - Motorcycle
  - Truck
  - Bicycle
- **Maritime transportation**
  - Boat
  - Ferry
- **Air transportation**
  - Aircraft
  - Helicopter
- **Rail transportation**
  - Commuter rail
  - Rapid transit (PATH, underground, subway, or elevated rail systems)
  - NJ Transit Light Rail (Hudson-Bergen, South Jersey, Newark City)

Major Roadways

- Interstate Highways (I-80, I-95, I-287, I-295)
- NJ State Highways (NJ24, NJ31, NJ73)
- US Highways (US1, US9, US22)
- New Jersey Turnpike
- Garden State Parkway
- Atlantic City Expressway
- Palisades Interstate Parkway

New Jersey Turnpike

The Turnpike was the first toll road in New Jersey and is maintained by the New Jersey Turnpike Authority. The Turnpike is considered the nation's sixth-busiest toll road and is one of the most heavily traveled highways in the United States. The Turnpike is a major route providing access to various localities in New Jersey, as well as Delaware, Pennsylvania, and New York. It is a total of 122.40 miles and runs from Interstate 295 (I-295) near the border of Pennsville and Carneys Point Townships in Salem County, one mile east of the Delaware Memorial Bridge in the southern terminus to the George Washington Bridge in Fort Lee, Bergen County in the northern terminus.



Garden State Parkway

The Parkway is considered the busiest toll highway in the country and is the longest highway in the state. The limited-access Parkway is 172 miles long and runs the entire length of New Jersey from the New York line at Montvale, New Jersey, to Cape May at New Jersey's southern terminus. At its north end, the Parkway becomes the Garden State Parkway Connector, which is apart of the New York State Thruway.

Atlantic City Expressway

The Atlantic City Expressway is a 44 mile controlled-access toll road that is managed and operated by the South Jersey Transportation Authority. It serves as an extension for the freeway portion of Route 42 in Turnersville southeast to Atlantic City. It connects the Philadelphia metropolitan area with Atlantic City and other Jersey Shore resorts.

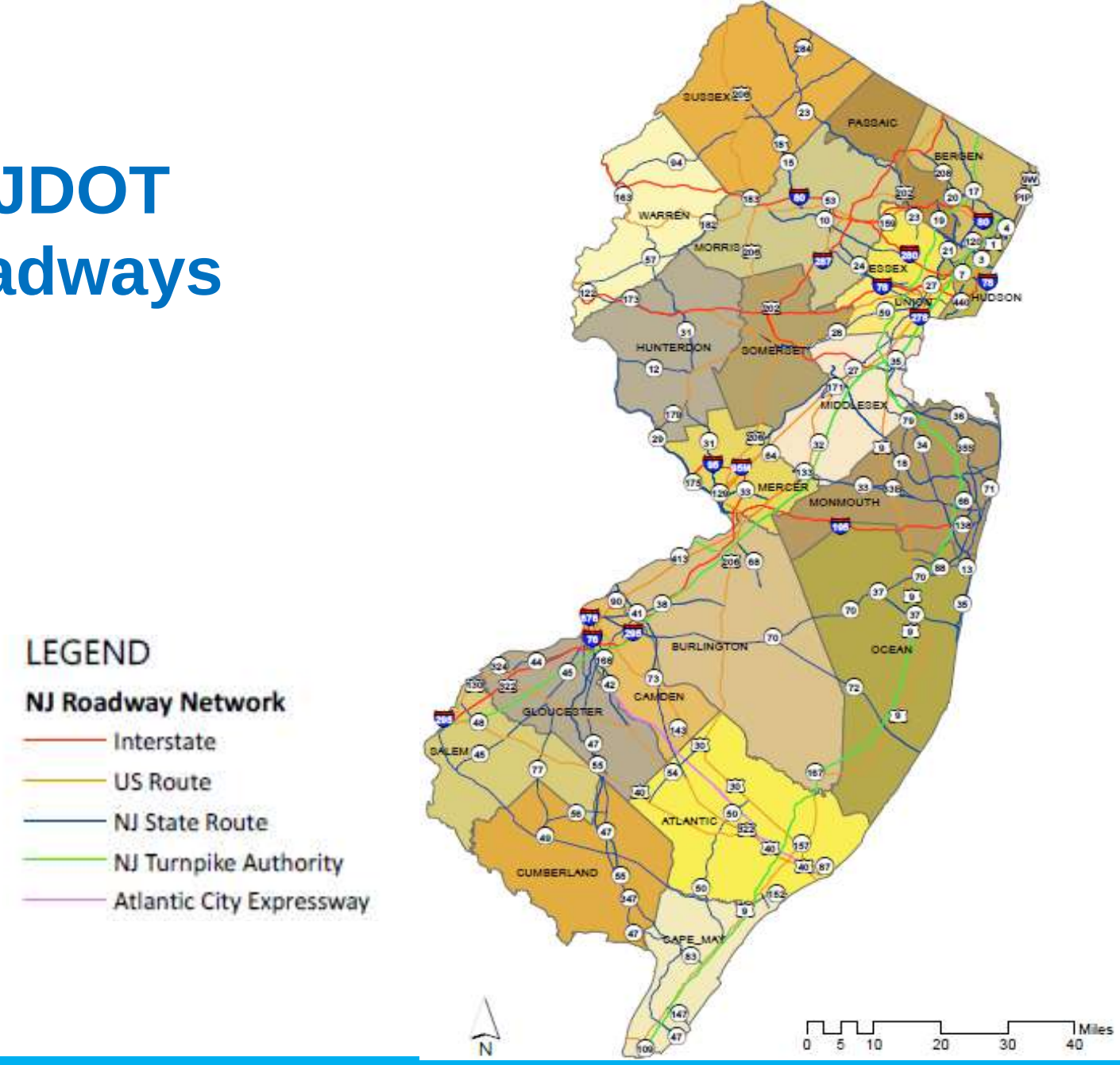
The expressway intersects many major roads, including Route 73 in Winslow Township, Route 54 in Hammonton, Route 50 in Hamilton Township, the Garden State Parkway in Egg Harbor Township, and U.S. Route 9 in Pleasantville.

Palisades Interstate Parkway

The Palisades Interstate Parkway (PIP) is a 38 mile limited-access highway that runs between New Jersey and New York. In New Jersey the PIP begins at the George Washington Bridge (GWB) in Fort Lee and parallels US 9W and the Hudson River.

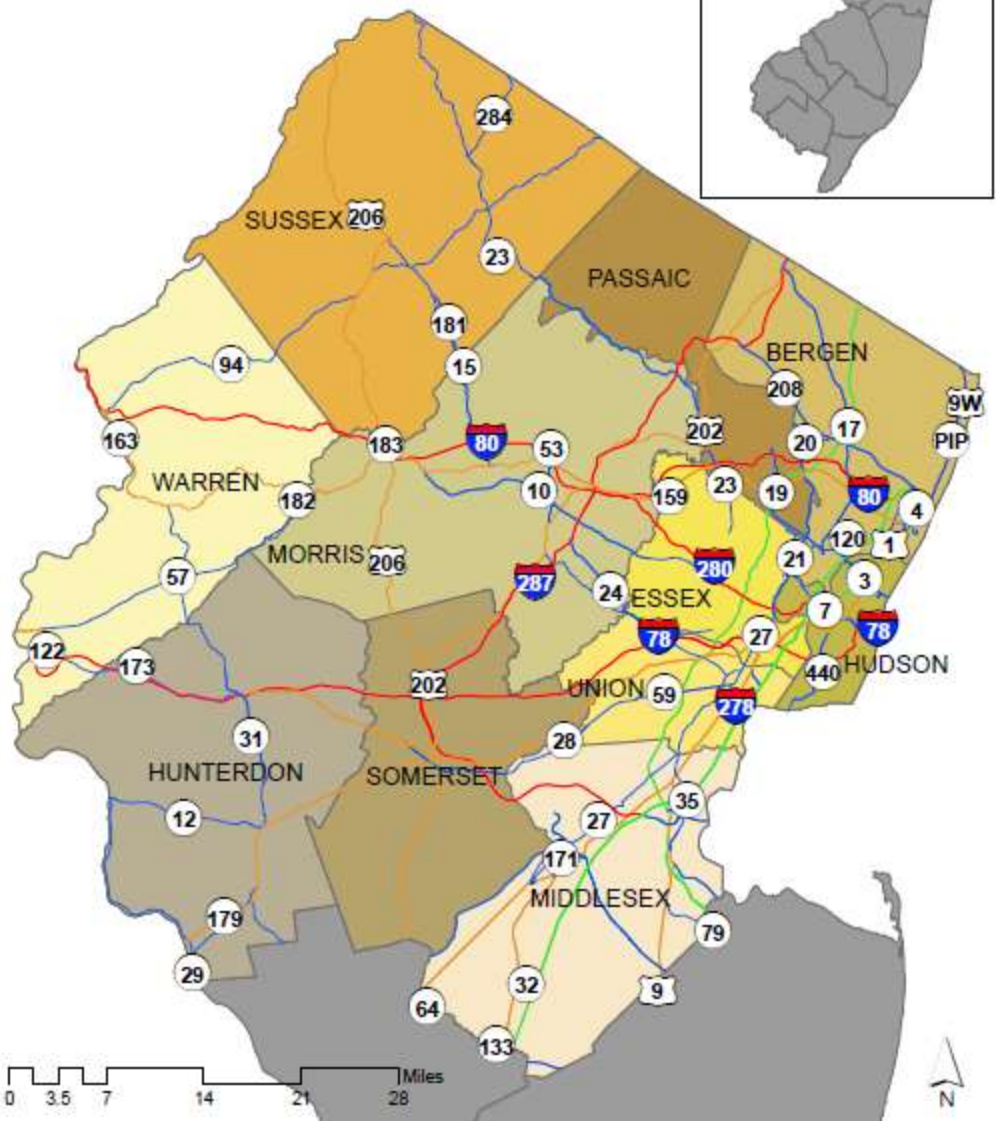
The entire New Jersey portion of the PIP is within Bergen County and is designated as a state scenic byway known as the Palisades Scenic Byway.

NJDOT Roadways

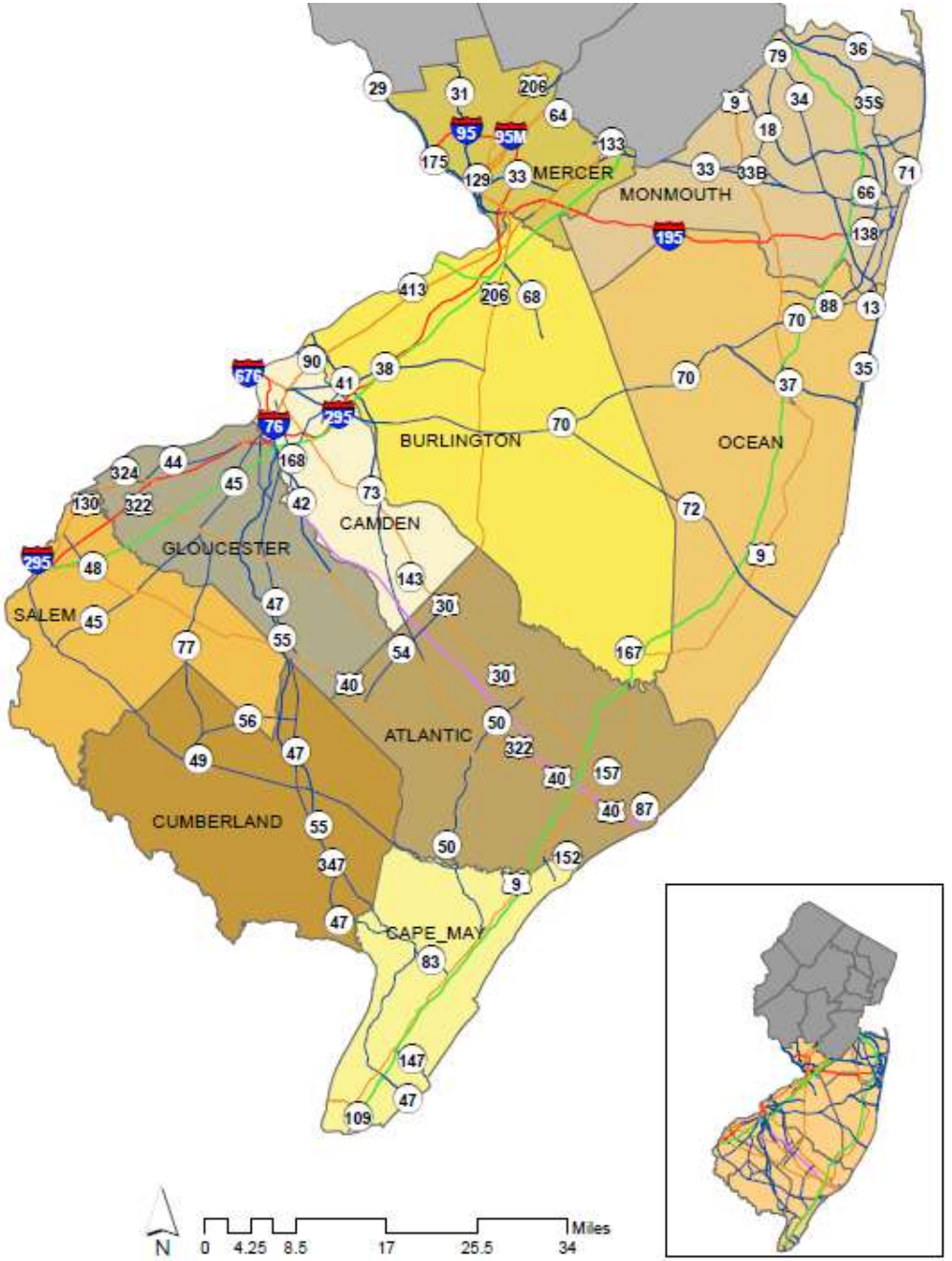


Major New Jersey Crossings

NJDOT STMC Coverage Area (North)



NJDOT TOC-South Coverage Area (South)



Mapping Information Resources

Available at the TMC for understanding transportation system

- OpenReach map
- Online map-based applications (i.e. Google Maps)
- 511 map
- RITIS
- GIS Applications

Module 3 Learning Checks

1. Have you gained a basic understanding about the transportation system?
2. Did you learn about the transportation networks and modes within the State?
3. Did you gain information about the resources available at the TMC for understanding the transportation system?
4. Did you learn about the TMCs' jurisdictions?

MODULE 4

INCIDENT MANAGEMENT

Strategic Highway Research Program 2 (SHRP2)

- SHRP2's National Traffic Incident Management Responder Training brings police, firefighters, DOT towing, medical personnel, and other incident responders together to engage in interactive, multidisciplinary training.
- A standardized training program for first responders and other agencies responsible for the safe, quick clearance of roadway incidents.
- Helps TMC Operators understand the needs and perspectives of those in the field.

NEW JERSEY

HIGHWAY SAFETY GUIDELINES

HIGHWAY INCIDENT SAFETY GUIDELINES

for Emergency Responders

Presented By:

New Jersey Division of Fire Safety
New Jersey State Police
New Jersey Department of Transportation

Definition of an Incident

An **incident** is defined as any non-recurring event that causes a reduction of roadway capacity or that affects or impedes the normal flow of traffic.

Examples of types of incidents:

- Motor vehicle crashes and/or fire
- Disabled vehicles
- Spilled cargo
- Highway maintenance, reconstruction, and construction projects

Incident Classification

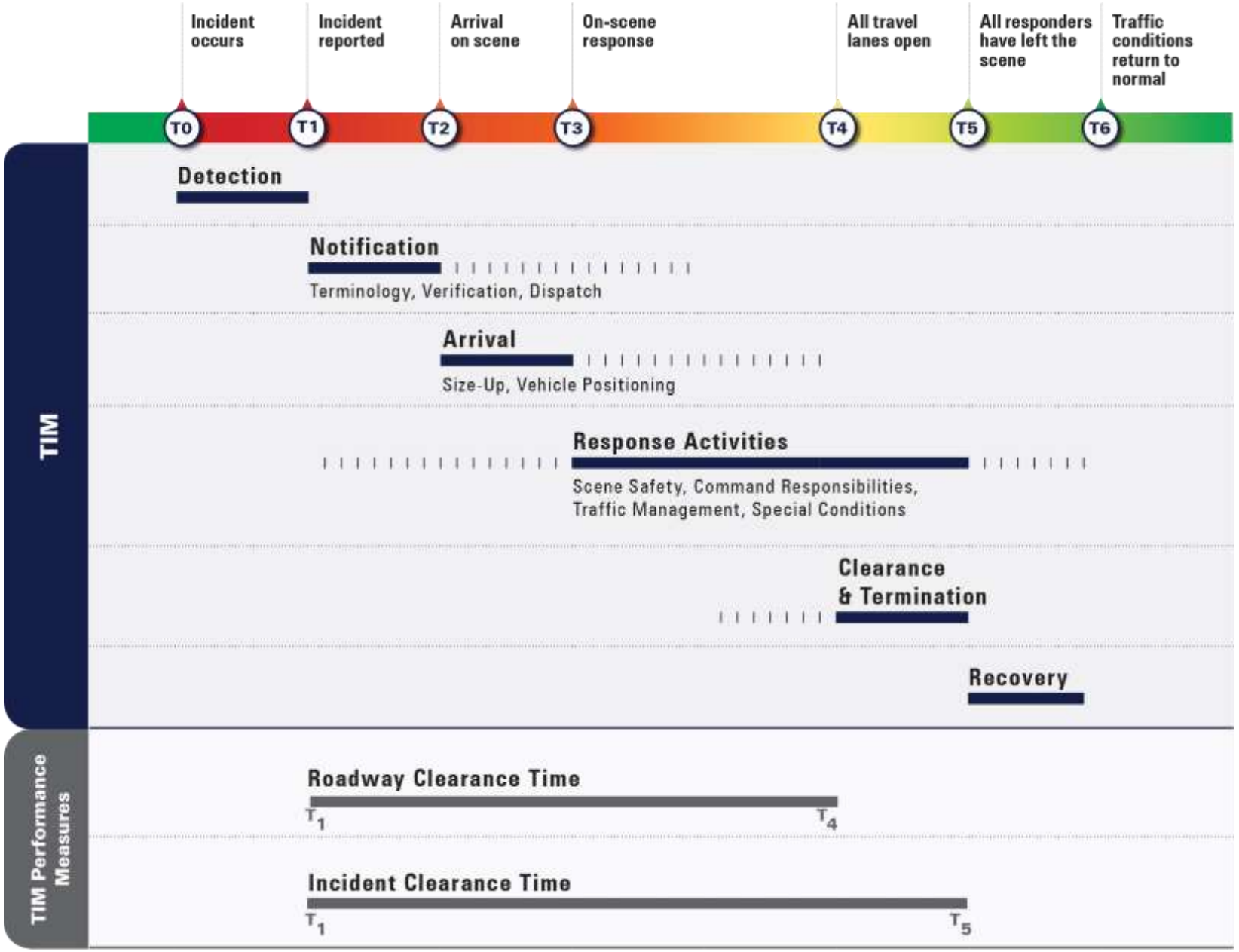
Incidents can be classified based on the level of severity, as shown below (Based on the MUTCD):

MINOR
Events with a duration of less than 30 minutes and result in moderate traffic impact or safety risk such as traffic incident in the travel lane involving minor injuries but not blocking traffic, weather conditions impacting travel speed, minor planned events, etc.
INTERMEDIATE
Events with a duration of 30 minutes to 2 hours with widespread, high traffic impact or safety risk such as road closure that has a high traffic impact, major planned events, weather causing disruptions, bus/plane/train/ferry crash, amber alerts, etc.
MAJOR
Events with a duration of over 2 hours and widespread, severe traffic impact or safety risk such as closure of major highway or bridge, crash or event involving deaths of 10 or more people, school bus incident, etc.

Incident Classification - NJDOT

New Jersey has expanded on the MUTCD classifications:

Incident Management Guide		
MAGNITUDE	**DURATION**	**PROTOCOL**
Minor	<30 min	• Notify NJSP if incident is on roadway where a minor delay can create significant traffic impact • Establish Advance Warning Area and other TTC Components as time/personnel permits
Intermediate	30 min to 2 hrs	• Notify NJSP • Establish TTC Components • Consider DOT Response (Supervisor Only)
Major	2+ hours	• Notify NJSP • Request DOT Response (Trailer) Early • Establish Full Work Zone (Same as Non-Emergency)


Incident occurs
Incident reported
Arrival on scene
On-scene response
All travel lanes open
All responders have left the scene
Traffic conditions return to normal
T0
T1
T2
T3
T4
T5
T6
TIM
Detection
Notification
Terminology, Verification, Dispatch
Arrival
Size-Up, Vehicle Positioning
Response Activities
Scene Safety, Command Responsibilities, Traffic Management, Special Conditions
Clearance & Termination
Recovery
TIM Performance Measures
Roadway Clearance Time
T1
T4
Incident Clearance Time
T1
T5

TIM Stages

Traffic Incident Management (TIM) consists of six primary steps, as follows:

1. Detection
2. Notification
3. Arrival
4. Response Activities
5. Clearance & Termination
6. Recovery

TIM Stages

1. **Detection** – determining that an event has occurred and is brought to the attention of the agency/agencies responsible for maintaining traffic flow and safe operations on the facility.

2. **Notification** – confirming that an event has occurred, determining its exact location, and obtaining as many relevant details about the event in order to dispatch the proper initial response.

3. **Arrival** – dispatching the appropriate personnel and equipment, and activating the appropriate communication links and motorist information media as the event is verified.

TIM Stages

4. Response Activities

- Scene Management - the process of effectively coordinating and managing on-scene resources. Ensuring the safety of response personnel, incident victims, and other motorists is the foremost objective of incident site management.
- Traffic Management **-** applying traffic control measures onsite and in areas affected by an event.
- Motorist Information - disseminating event-related information to affected motorists through the use of various methods.

TIM Stages

5. **Clearance & Termination** – removing wreckage, debris, or any other elements that disrupt the normal flow of traffic.
   - Roadway Clearance Time – The time between first recordable awareness of an incident by a responsible agency and first confirmation that all travel lanes are open.
   - Incident Clearance Time – The time between the first recordable awareness and the time at which the last responder has left the scene.

6. **Recovery** – evaluating the long-term impact of an incident and identifying recovery actions needed to mitigate those impacts.

Important TIM Frameworks

- **National Incident Management System (NIMS)** developed by the Department of Homeland Security is a national standardized approach to incident management and response. It establishes a uniform set of processes and procedures that emergency responders at all levels of government use to conduct response operations.

- **Incident Command System (ICS)** is a standardized, on-scene, all-hazards incident management approach that:
  - Allows for the integration of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.
  - Enables a coordinated response among various jurisdictions and functional agencies, both public and private.
  - Establishes common processes for planning and managing resources.

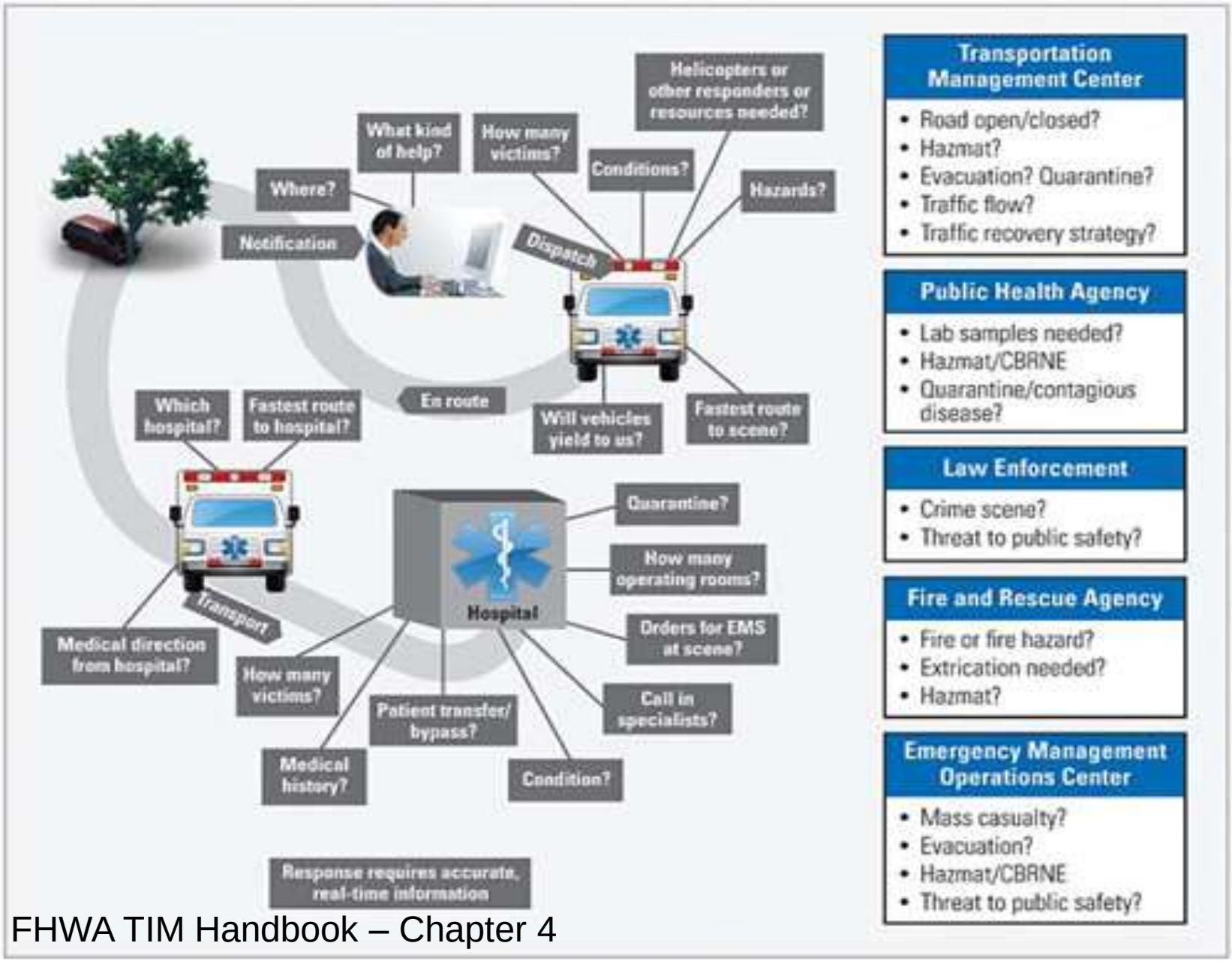
TIM Agencies

First Responders

- Law Enforcement
- Fire and Rescue Agencies
- Emergency Medical Services (EMS)
- NJDOT SSP/IMRT

Other Responders

- NJDOT Maintenance
- Towing and Recovery
- Medical Examiner
- Utility Companies



FHWA TIM Handbook – Chapter 4

http://www.ops.fhwa.dot.gov/eto_tim_pse/publications/timhandbook/chap4.htm

Incident Management Unit (IMU)

- Serves as a member of IMRT
- Agencies in IMU
  - New Jersey DOT
  - NJ State Police (NJSP)
  - New Jersey Division of Fire Safety (NJDFS)
- Personnel
  - NJSP – 1 Lieutenant (Unit Head), 6 Sergeant First Class Officers (SFC's) or Regional Incident Management Coordinators (RIMC's)
  - NJDOT – 16 Incident Management Responders (IMRT-ers)
  - NJDFS – 4 Regional Incident Responders

Incident Management Unit (IMU)

- There are 4 main TIM activities that the IMU gets involved with:
  - Roadway Incidents
  - Special Events
  - Highway Construction
  - Weather Related
- Members of this Unit typically serve as Incident Commander on scene, and their role is to coordinate response efforts among the various responder disciplines.

Module 4 Learning Checks

1. Do you understand the impacts of incidents?
2. Have you gained insight into how the incidents are classified based on the levels of severity?
3. Do you understand that incident management is a step-by-step process?
4. Do you understand the frameworks used for incident management?
5. Did you become familiar with responder agencies involved in TIM?

MODULE 5

EMERGENCY TRANSPORTATION OPERATIONS

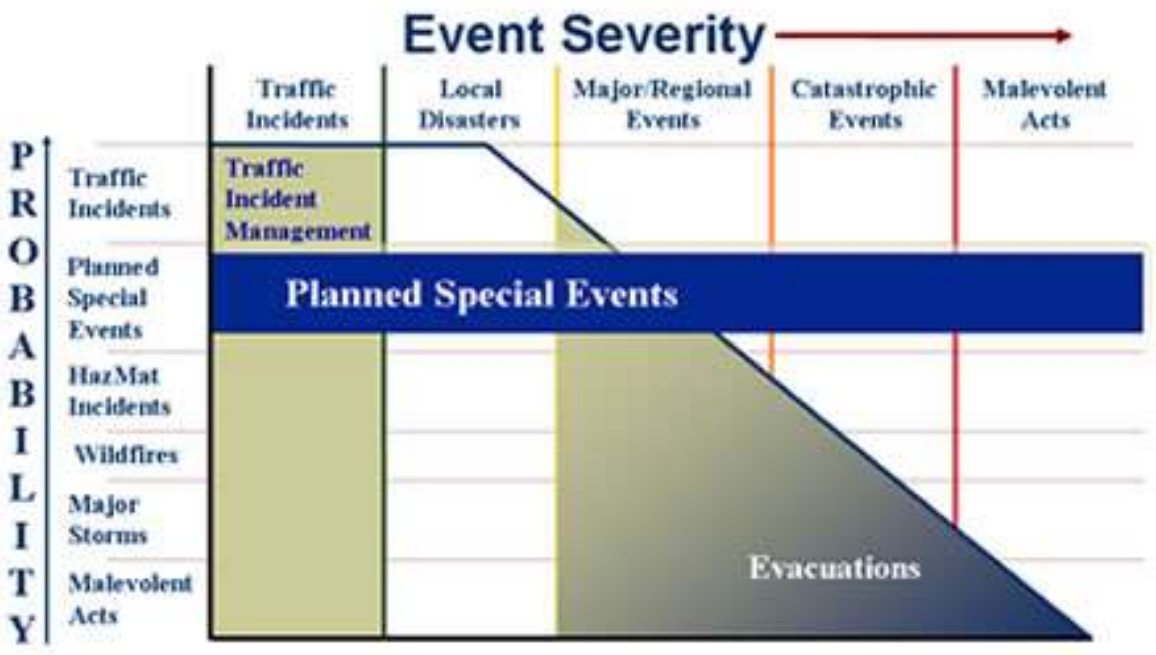
Emergency Transportation Operations (ETO)

ETO is defined as “a comprehensive, coordinated, performance-oriented approach among the transportation, public safety, and emergency management communities in preparing for, responding to, and recovering from traffic incidents, planned events, natural or human caused disasters, and other types of events.”

http://www.ops.fhwa.dot.gov/eto_tim_pse/

Emergency Transportation Operations (ETO)

- Traffic Incident Management (TIM)
- Traffic Management for Planned Special Events
- ETO for Disasters



http://ops.fhwa.dot.gov/eto_tim_pse/about/eto.htm

Planned Special Events

- **Public activity with a scheduled time, location and duration that may impact the normal operation of the surface transportation system due to increased travel demand and/or reduced capacity attributed to event staging.**
- Examples: sporting events, concerts, festivals, and conventions occurring at permanent multi-use venues (e.g., arenas, stadiums, racetracks, fairgrounds, amphitheaters, convention centers),
- They also include less frequent public events such as parades, fireworks displays, bicycle races, sporting games, motorcycle rallies, seasonal festivals, and milestone celebrations at temporary venues.

Managing Travel for Planned Special Events

Involves:

- Advanced operations planning,
- Stakeholder coordination and partnerships,
- Developing a multi-agency transportation management plan,
- Raising awareness of general public and event patrons of potential travel impacts, and
- Coordinating agency services and resource sharing.

MetLife
XLVIII
SUPER BOWL

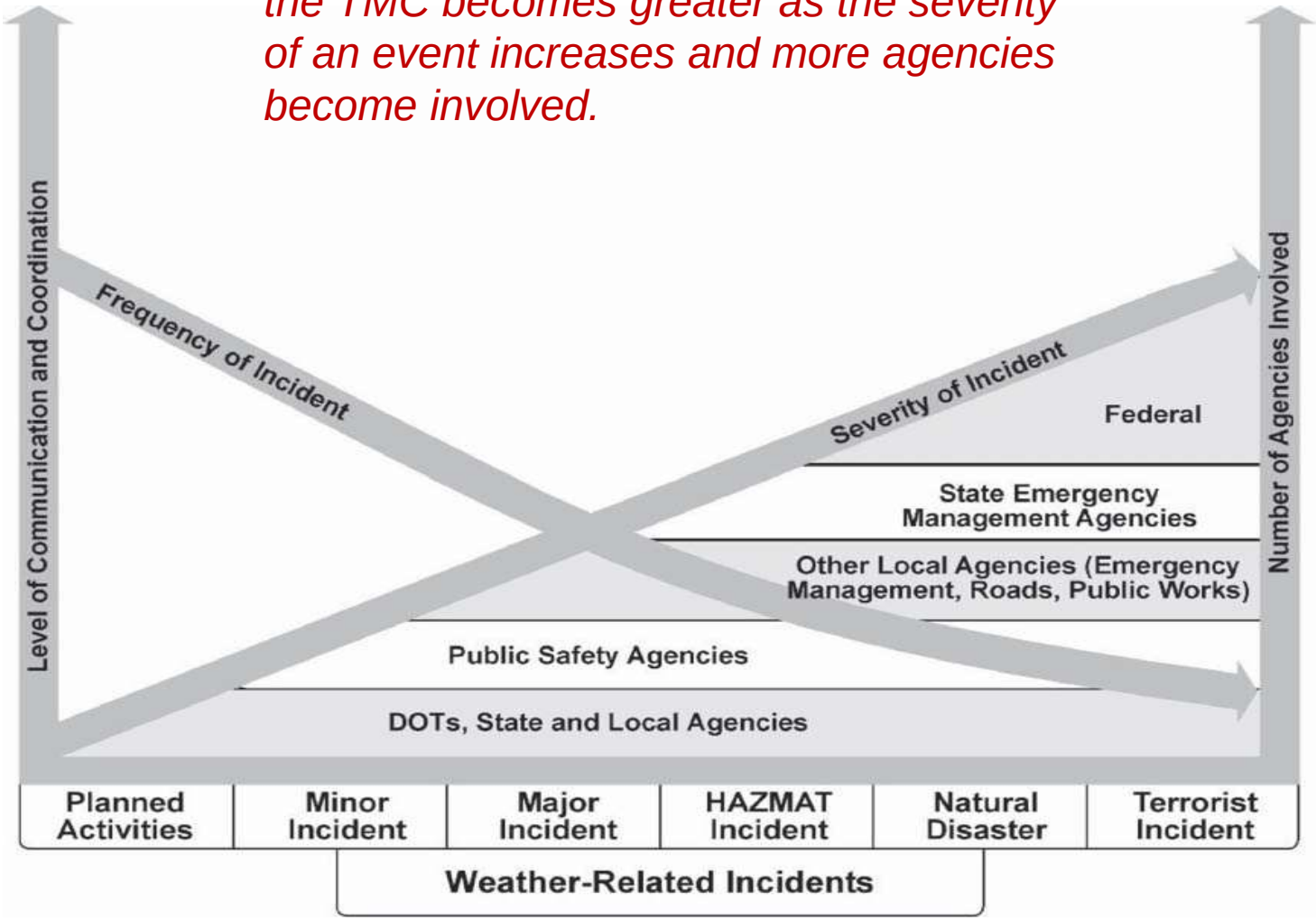
Planned Special Events – Super Bowl

- Agency partnerships
- Challenge – Traffic Management
- Planning for Operations
- Technology/ITS
  - Portable VMS
    - Message consistency
  - CCTV

Example Local Event

- PLACEHOLDER SLIDE TO DISCUSS LOCAL EVENT

Being the focal point of travel conditions, the demand on the functions performed by the TMC becomes greater as the severity of an event increases and more agencies become involved.



Complexity of ETO

Role of TMC in ETO

- TMCs **monitor**, **detect**, and **verify incidents** affecting transportation operations and safety, serve as a clearinghouse, and provide information to emergency agencies on the status of the transportation infrastructure providing **situational awareness**.

- TMC functions include **gathering**, **synthesizing**, and **disseminating traffic and travel condition information**. These functions enable TMC personnel to monitor and control the operations of the transportation system, whether it is the management of congestion, incidents, or other events.

Functions of TMC in ETO

Functional categories

1. Incident Management
2. Freeway Management
3. Information Dissemination
4. Coordination with Other DOT Functional Groups

Functions of TMC in ETO

1. **Incident Management**
   - Support the emergency response activity through the use of existing and/or redeployed incident management systems and resources to more effectively deal with the emergency site and affected roadway facilities.

2. **Freeway Management**
   - Support the emergency response activity through the use of existing and/or redeployed freeway and arterial management systems and resources to more effectively manage the affected freeway and arterial facilities during the emergency conditions.

Functions of TMC in ETO

3. Information Dissemination

- Support the emergency response activity by collecting and providing information regarding the status of traffic and highway conditions as well as emergency response activities.

4. Coordination with Other DOT Functional Groups

- Support the emergency response activity by participating in the coordination of operational activities with internal functional groups and external operational partners.

NJ Office of Emergency Management (NJOEM)

- Works closely with federal, state and local partners to prepare for all hazards, natural or manmade that affect New Jersey.
- Responsible for emergency management activities in the State.
- Responsible for planning, directing and coordinating emergency operations within the State which are beyond local control.
- All activities and departments are coordinated, directed and controlled from the State Office of Emergency Management, Emergency Operations Center.
- The Superintendent of the NJSP is generally appointed as the State Director of the New Jersey Office of Emergency Management.

Visit the NJOEM Web Site
http://ready.nj.gov

NJ Office of Emergency Management (NJOEM)

Consists of the following three bureaus:

- Emergency Response Bureau
- Recovery Bureau
- Communications Bureau

NJOEM Emergency Response Bureau

- **Regional Units**
  - Coordinate emergency management activities throughout the counties and municipalities in the Region (North, Central, South)
- **Hazardous Materials Response Unit (HMRU)**
  - Provides operational response and planning support for HAZMAT incidents
- **Urban Search and Rescue**
  - New Jersey Task Force One – specially trained for advanced level search and rescue
  - Federal Surplus Property Program

NJOEM Recovery Bureau

- **Public Assistance Unit**
  - Manages the Public Assistance Grant Program before, during, and after presidentially declared disasters or emergencies.
- **Preparedness Unit**
  - Maintains the State Emergency Operations Plan and the State Emergency Procedures Directory.
- **Mitigation Unit**
  - Enhances state, county, and municipal risk reduction through the development and implementation of mitigation strategies.

NJOEM Recovery Bureau

- **Field Training Unit**
  - Responsible for conducting emergency management training courses
- **Support Services Unit**
  - Coordinates the development of all Citizen Corps Programs (Community Emergency Response Teams, Neighborhood Watch, Volunteers in Police Service, Fire Corps, and Medical Reserve Corps) throughout the State.

NJOEM Communications Bureau

- **Radio/ Electronics Maintenance Unit (REMU)**
  - Maintenance of all public safety radio and related equipment
- **Telecommunications Unit**
  - Telephone service, pagers, cellular phones, etc.
- **Operational Dispatch Units**
  - Tracking patrols
  - Processing state police emergency and non emergency phone lines.
    - North
    - Central
    - South
    - Turnpike/Parkway
    - Call Center

New Jersey County OEM

- Atlantic County
  - http://www.readyatlantic.org
- Bergen County
  - http://www.bcoem.org/
- Burlington County
  - www.co.burlington.nj.us/oem
- Camden County
  - http://www.camdencounty.com/public-safety/office-emergency-management
- Cape May County
  - http://www.capemaycountygov.net
- Cumberland County
  - http://www.ccoem.org
- Essex County
  - http://www.essexsheriff.com/
- Gloucester County
  - http://www.co.gloucester.nj.us
- Hudson County
  - http://www.hudsoncountynj.org/office-of-emergency-management--oem.aspx
- Hunterdon County
  - http://www.co.hunterdon.nj.us/oem.html
- Mercer County
  - http://www.mercercounty.org

New Jersey County OEMs (continued)

- Middlesex County
  - http://www.co.middlesex.nj.us/emergency/index.asp
- Monmouth County
  - http://www.monmouthsheriff.org
- Morris County
  - http://www.morrisoem.org
- Ocean County
  - http://www.co.ocean.nj.us/EMMgmt/Main.aspx
- Passaic County
  - http://www.passaiccountynj.org
- Salem County
  - http://www.readysalem.org/
  - http://www.salemcountynj.gov/
- Somerset County
  - http://www.co.somerset.nj.us/division/emergencyman.html
- Sussex County
  - http://www.sussexcountysheriff.com/about/emergency_management/
- Union County
  - http://www.ucnj.org
- Warren County
  - http://www.wcpublicsafety.com/

Module 5 Learning Checks

1. Did you learn a basic understanding of Emergency Transportation Operations?

2. Do you understand the purpose of the TMC during emergency response situations?

3. Did you learn about the functional roles of the TMC during emergencies?

4. Did you learn about the New Jersey Office of Emergency Management and the County OEMs?

MODULE 6

TRAFFIC MANAGEMENT

TMC Operator Responsibilities

- Assist in incident detection and verification
- Operate Variable Message Signs (VMS)
- Operate Closed Circuit Television Cameras (CCTV)
- Monitor and exchange information during events and incidents
- Provide safety information to motorists
- Provide traveler information to partners, the public, and media
- Notify NJDOT staff (as appropriate)
- Documentation of incidents and planned events

Planned and Unplanned Events

- Traffic impacting events on roadways are either unplanned or planned:
  - Unplanned events are incidents such as crashes, debris on roadway, flooding
  - Planned events include roadwork/highway construction and special events

Collection of Incident and Event Details

- Details – Operators need to determine the following details of incidents or events
  - What is it? (roadwork, crash, debris, flooding, etc.)
  - Where is it? Where does it start and end?
    - What road is it on?
    - What travel direction?
    - What is it near – Mile Marker(s), Exit(s), crossroad(s)?
  - What effect? (road or ramp closure(s), what lanes are closed, expected duration)

Collection of additional incident details where incident response involves IMU

- Hazmat?
- Evacuation?
- Traffic flow?
- Traffic recovery strategy?

Incident and Event Detection and Verification

- Detection and verification of unplanned events/incidents
  - Highway cameras
  - Speed data maps
  - Safety Service Patrols (SSP)
  - New Jersey State Police (NJSP)
  - Local Police
  - DOT crews
  - Motoring public

Incident and Event Detection and Verification

- Planned Roadwork, Highway Construction
  - Resident engineers and contractors submit roadwork and highway construction forms to the STMC and TOC-South email addresses
  - Operators review and approve these request
- Planned Special Events
  - Small events come in via fax or email
  - Larger events involve NJDOT Traffic Operations planning and coordination and the TMC role is defined from this planning

Incident and Event Response – Operator Action Overview

- **Detect/Verify/Monitor:**
  - Highway cameras
  - Phones, radio
  - Speed and incident maps
  - Safety Service Patrol (SSP) status
  - Weather systems
- **Information Exchange:**
  - Internal/External coordination and response
- **Incident and event documentation**
- **Information Dissemination:**
  - Safety messages (VMS)
  - Traveler information (511)
  - Clearing house (TRANSCOM)
  - Internal/external notifications (Email)

Detect / Monitor / Verify

- **Highway cameras**
  - TMC Video Wall
  - Camera Control Software
  - Other agency and partner cameras
- **Speed maps**
- **Phone, Radio, Email**
  - DOT Phones
  - Central Dispatch Unit (CDU) radio and SSP dispatch
  - DOT Email
- **Weather systems**
  - Real-time current information
  - Radar and forecast information

Information Exchange

- Receive reports of incidents, verify incidents, and enters event details into OpenReach database
- Response actions on the floor between TOC staff, status of incidents and events
- Communication with CDU and SSP
- Communicate with NJSP or local police or county communications center as per direction from shift supervisor
- Communicate with supervisor as needed if incident requires response from IMRT or Traffic Operations Duty Officer (DO), as per **Operations Bulletin 1003B Appendix D.**

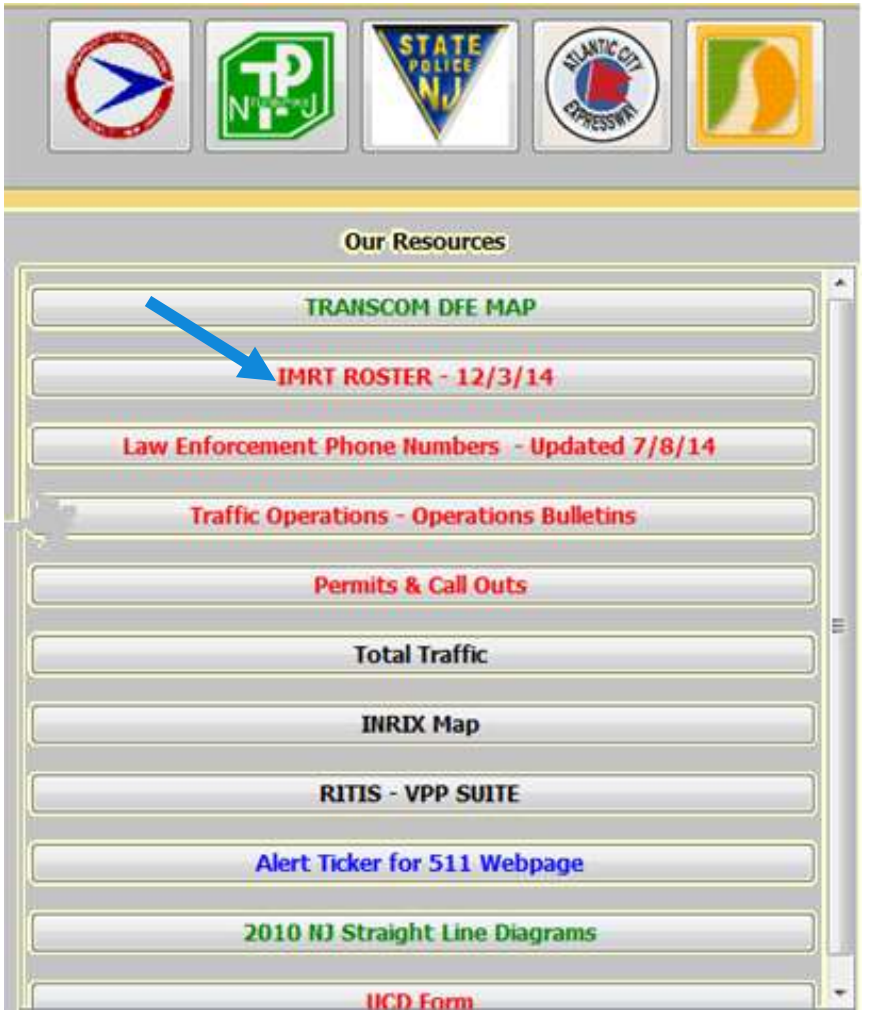
Duty Officer Contact List

- Provides phone numbers of Duty Officers at NJDOT units, as well as partner agencies, including:
  - State agencies (NJSP, DEP, NJTA, SJTA, etc.)
  - PANYNJ
  - FHWA
  - Media
  - TRANSCOM
  - Utilities
- List is kept at STMC and TOC South, and is also available through NJDOT Intranet.

Information Exchange: IMRT Roster

Provides the following information:

- IMRT coverage areas by road mile marker
- Primary and secondary contacts



Information Exchange: Law Enforcement Book

- Municipal Police Departments
- NJ State Police
- County Agencies
- County Office or Emergency Management
- Federal agencies
- Port Authority Police Department

Information Exchange: Central Dispatch Unit (CDU)

- NJDOT's Emergency Call Center
- CDU personnel receive maintenance requests for salt spreader, plow truck, etc.
- IMRT-ers on site may also request NJDOT maintenance at the site of an incident
- All CDU calls are in radio log; emergency calls, including electrical or maintenance requiring work orders get entered into CDU dispatch database (EL-15)

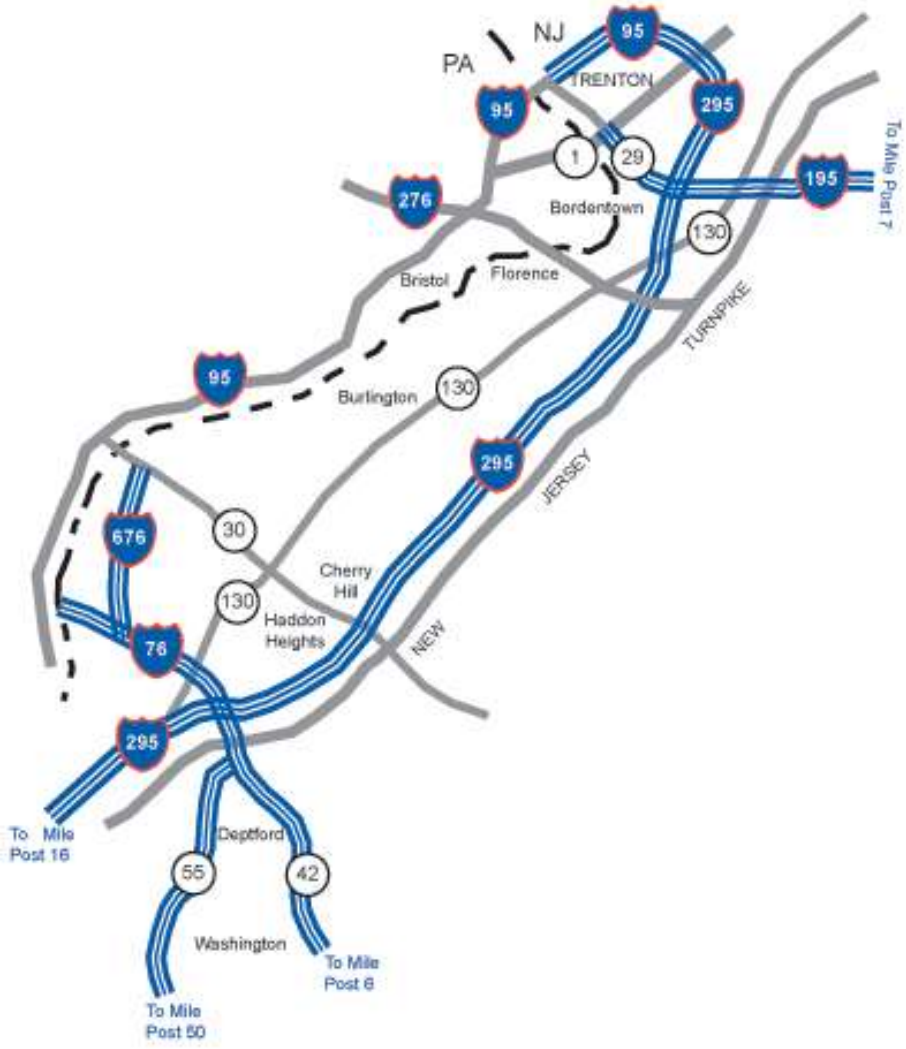
Information Exchange: Safety Service Patrols (SSP)

- Central Dispatch Unit (CDU) on TMC Floor
  - Coordinate SSP dispatch through CDU
  - Monitor the dispatch database, CDU Radio
- Safety Service Patrols roadway coverage times
  - 4:00 AM – 8:30 PM (Weekdays All Year)
  - 10:00 AM – 8:30 PM (Weekends)
  - 9:00 AM – 7:30 PM (Memorial Day Weekend to Labor Day Weekend*)

** South Region Only For Shore Traffic*

North Region SSP Coverage Area Map

South Region SSP Coverage Area Map



Information Exchange: IMRT

- The NJDOT IM officer (IMRT-er) is an on-scene at the incident coordinator that relays information to the TMC and the Director.
- An IMRT-ers role is to oversee and coordinate all DOT activities during an incident with the aim of reopening lanes for traffic as quickly and safely as possible.
- Generally, if a request for the IMRT is made, the shift supervisor on duty at either the STMC or TOC South will make the determination to call out the IMRT.

Information Exchange: IMRT

Appendix D: **List of Incidents that may require an IMRT Response:**

The Incident Management Response Team shall be notified immediately for lane/road closures on any State or Interstate Roadway for any of the reasons listed below. **The Traffic Operations Center shall notify the NJDOT and the NJSP Response Personnel concurrently.**

1. Overturned Tractor Trailer.
2. Any Hazmat incident, excluding a small (less than 20 gallon) motor vehicle fluid spill.
3. MVA causing structural damage to a roadway or bridge structure, including overhead bridge structures.
4. MVA with fatalities.
5. Total roadway closure (in one or both directions) for 2 hours or more that has the potential to affect the morning rush hour. **(Road closures caused strictly by a Traffic Signal Knock Down are not to be considered a major incident).**
6. Fire/Explosion on, under or adjacent to a State or Interstate Roadway that results in a closure or damage to the roadway.
7. Any time an Incident Command Post is established involving lane/roadway closures.
8. Any airplane crash (commercial or private) that will result in a closure of NJDOT maintained roads.
9. Unplanned events requiring NJDOT resources (i.e. civil disorders, disasters, search and rescue operations.)
10. School Bus Accident on all NJ Roads with injuries to Children and/or Adults. If serious injuries – send IMRT and/or SSP and/or NJSP or all to the scene.

Incident and Event Documentation

TMC operators document incidents and events in the OpenReach database

- Incident data entry form
- Highway construction data entry form
- Update records as conditions change; close record when incident clears or event finish
- Tracking of operator inputs:
  - Monthly reporting to identify different types of incidents and roadway locations for measuring incident durations.
  - Goal: average incident durations of less than 50 minutes on Interstates, and less than 90 minutes on US/State routes.

Incident and Event Documentation

OpenReach – Incident Record Lifecycle

1. Open record for highway incident
2. Enter incident details
   - Incident Type*
   - Facility/Route*
   - Direction*
   - Mile Post/Exit*
   - Duration*
   - Lane Closures
   - User Actions
3. Submit incident record into database
4. Update incident record
   - Change in estimated duration
   - Lane Closure changes
   - Responders enroute/rerouted/on scene/leave scene
   - ITS Equipment used
5. Incident cleared – Close incident record

Information Dissemination: Safety Messages

- VMS software is used to create and send messages to electronic message boards on the roadways
  - Create quick messages for incidents
  - Create and save messages to the message library for planned events like highway construction
  - Create and save messages to the message library for Public Service Announcements (PSAs) and special events

Information Dissemination: Traveler Information

- The OpenReach software uses the incident or event detail information that the operator inputs into the system utilizing the drop down menus to create a message that is then passed to NJ DOT's 511 traveler information system
  - *www.**511**nj.org*

TRANSCOM
Information Clearing House

- The OpenReach software platform is utilized by a coalition of 16 public safety and transportation agencies in New Jersey, Connecticut, and New York. Transcom provides interagency communication and enhanced utilization of agency resources through the OpenReach program*
- New Jersey implementation of the OpenReach program was the first instance of OpenReach to be deployed and has been stable in its operation since 2011*

http://www.covalsystems.com/latest/about/customers.html

Email Distribution Lists

Notifying Front office/Executives

- The OpenReach software provides the ability for an Operator to create and disseminate emails with incident or event details that will auto-populate with text from the OpenReach record.
- This function is used to alert ‘the front office/executives’ and other stakeholders of incidents and events as outlined in **OB5005C Traffic Alerts Section B.**
- The emails are sent from the STMC email account or the TOC-South email account depending on OpenReach system login:
  - Operators are to initial these emails upon sending them
  - All email updates should be modified to read “update 1” “update 2” etc.

NJTA and SJTA Notifications

- New Jersey Turnpike Authority (NJTA) provides TIM support to New Jersey Turnpike and Garden Sate Parkway
- South Jersey Transportation Authority (SJTA) provides TIM support to Atlantic City Expressway
- NJDOT STMC and TOC-South may assist these agencies:
  - Supervisor to Supervisor request for additional TMC support
  - NJDOT will post messages on VMS as support
  - OpenReach program may be used where major events impact DOT roadways
- **OB5005C Traffic Alerts "Major incidents that occur on non-NJDOT highway jurisdictions**…."

Weather Events

- The CDU monitors weather reports, especially during the period from November 1st to April 30th
- CDU notifies designated person from the Operations Division when said reports contain an Advisory, Special Statement, Warning or alludes to an adverse winter weather condition that will affect the state of New Jersey
- **Operations Bulletin 4001B**

Planned Special Events - General

- Notification of planned special events may come in via fax or email
  - These events are typically small and the NJDOT permits office directed the event sponsor to submit an **Lane Closure Request (LCR)**
- Special events requiring more planning and coordination will come down from Traffic Operations with a predetermined TIM plan
  - TMC informed of their role by phone or email

Unanticipated Construction Delays

OB5001C Unanticipated Construction Delays (Late Running Construction)

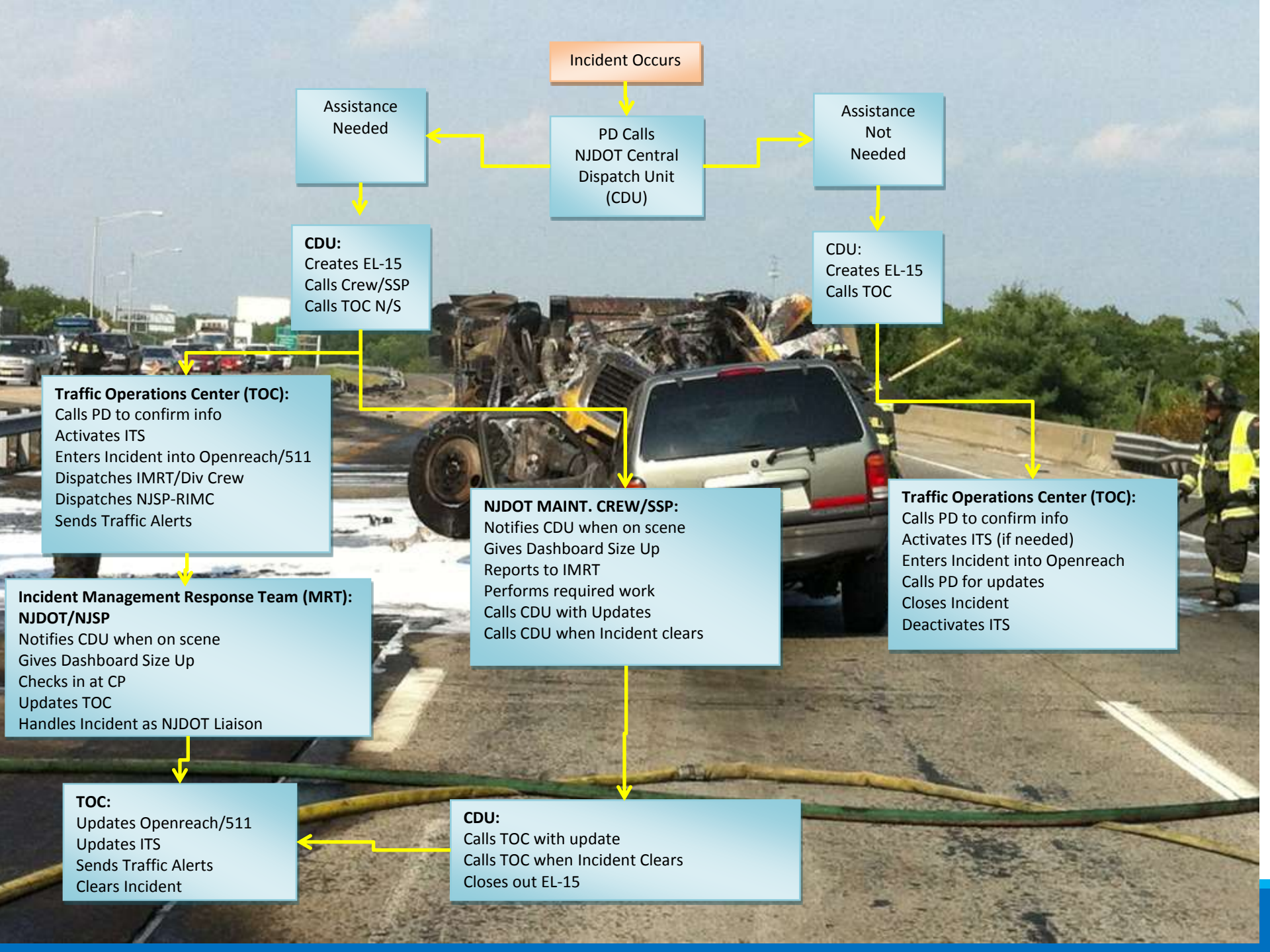
- Operator monitors and gathers information first 15 minutes of late running construction
  - Operator should contact construction contact or Resident Engineer for details on lane closures and reason for delay per OB.
  - Fill out UCD checklist form.
- Procedure for when construction exceeds 30 minutes over approved scheduled times
  - Operator to create a new event as UCD incident with updated lane closure as indicated by the Resident Engineer.
  - Begin notification process per OB.

Amber Alert / Silver Alert

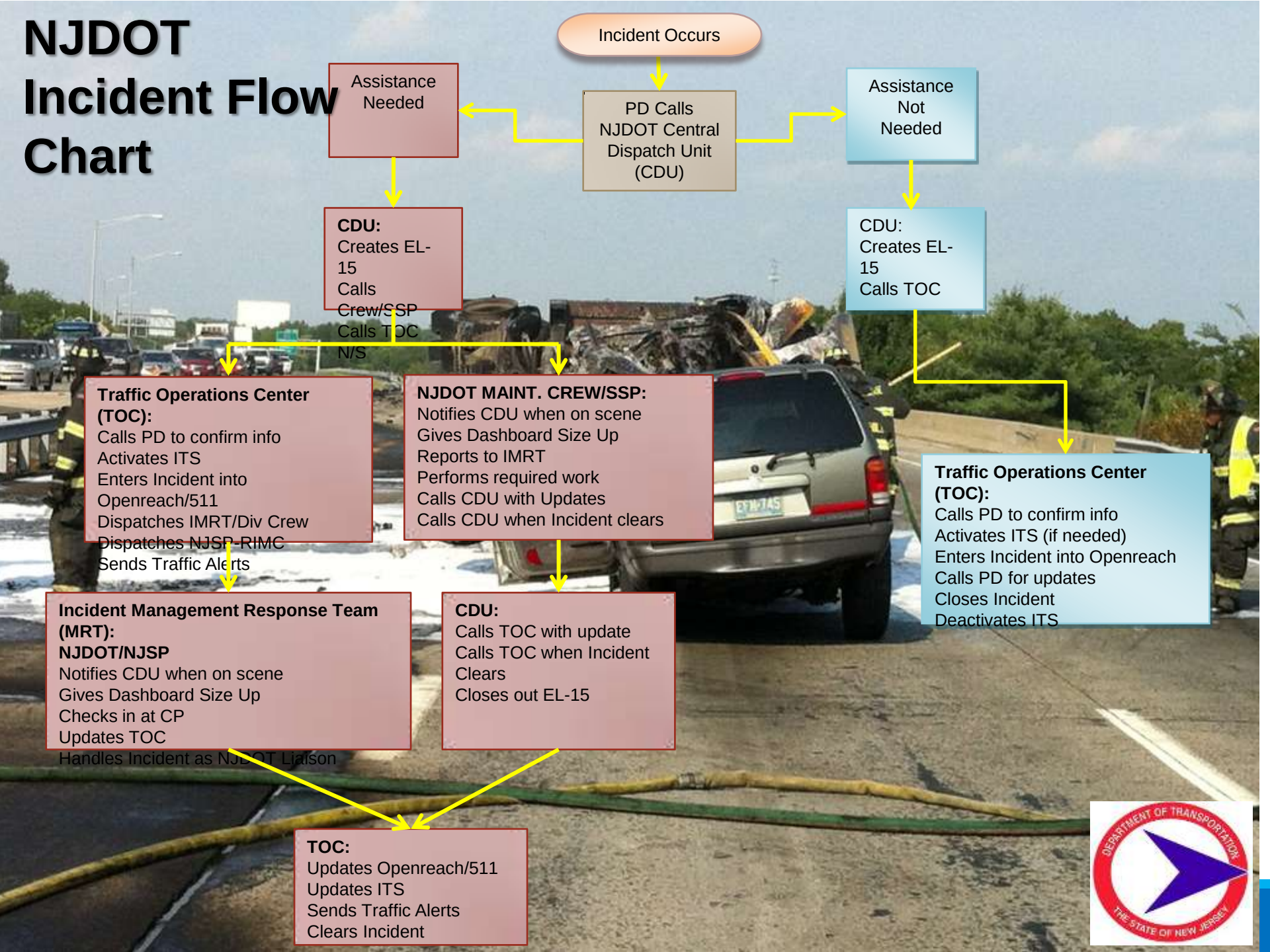
- NJSP send alert to NJDOT with Alert information in the form of an email or fax
- NJDOT assist NJSP by utilizing statewide ITS resources as part of the AMBER and Silver Alert programs
- Guidelines for NJDOT support role can be found in **OB1004C.**

PATH Trains Delays Advisories on Variable Message Signs (VMS)

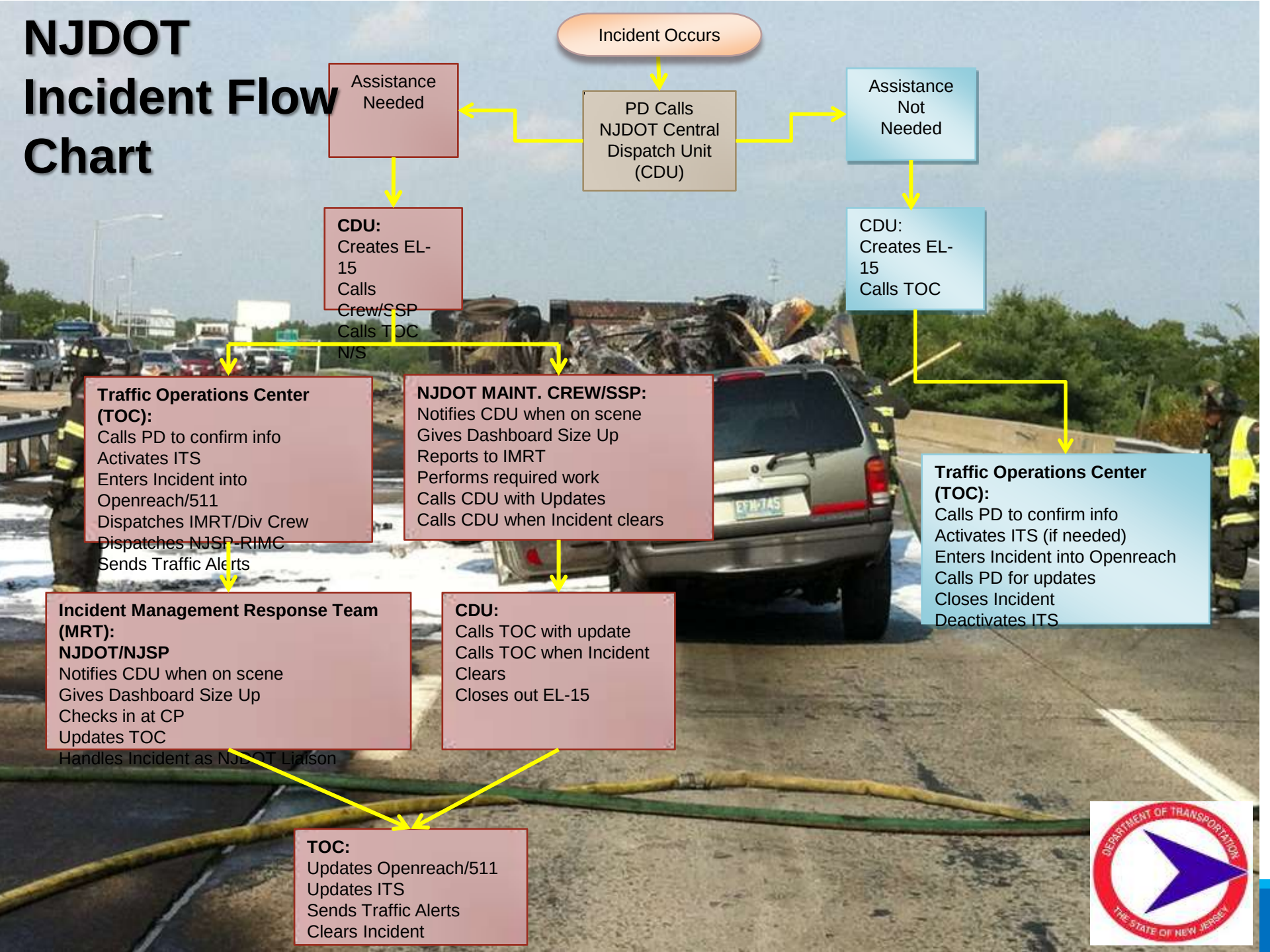
- For 60 minute delays or greater
- Incident messages have priority over PATH Train Delay advisory
- Guidelines found in **OB5006B**


Incident Occurs
PD Calls NJDOT Central Dispatch Unit (CDU)
Assistance Needed
Assistance Not Needed
CDU:
Creates EL-15
Calls Crew/SSP
Calls TOC N/S
CDU:
Creates EL-15
Calls TOC
Traffic Operations Center (TOC):
Calls PD to confirm info
Activates ITS
Enters Incident into Openreach/511
Dispatches IMRT/Div Crew
Dispatches NJSP-RIMC
Sends Traffic Alerts
NJDOT MAINT. CREW/SSP:
Notifies CDU when on scene
Gives Dashboard Size Up
Reports to IMRT
Performs required work
Calls CDU with Updates
Calls CDU when Incident clears
Traffic Operations Center (TOC):
Calls PD to confirm info
Activates ITS (if needed)
Enters Incident into Openreach
Calls PD for updates
Closes Incident
Deactivates ITS
Incident Management Response Team (MRT):
NJDOT/NJSP
Notifies CDU when on scene
Gives Dashboard Size Up
Checks in at CP
Updates TOC
Handles Incident as NJDOT Liaison
TOC:
Updates Openreach/511
Updates ITS
Sends Traffic Alerts
Clears Incident
CDU:
Calls TOC with update
Calls TOC when Incident Clears
Closes out EL-15

NJDOT Incident Flow Chart



NJDOT Incident Flow Chart



Important Points to Remember:

- Acquiring timely and accurate traffic data is the key to efficient traffic management
- It is critical to be aware of all the resources available for traffic monitoring and have a good working knowledge of them

Module 6 Learning Checks

1. Have you identified methods used to monitor traffic used in the TMC and in the state?
2. Do you understand the responsibilities of the TMC and the role of TMC operators regarding traffic monitoring and management?
3. Did you gain hands-on experience with gathering the correct information when being notified of incident?
4. Are you able to identify different information exchanges in the incident management process?
5. Are you able to identify the different OBs that enable operators and shift supervisors to make informed decisions?

MODULE 7

INTRODUCTION TO SOFTWARE SYSTEMS AND TECHNOLOGIES

Primary TMC Software Systems and Technologies

TMC operators utilize three primary tools to effectively and efficiently managing events on NJDOT's road network.

- **OpenReach**
  - Incident and planned event management information system
  - Incident and Planned event documentation and information dissemination (feeds 511NJ system)
- **Vanguard**
  - Primary software for controlling VMS
  - Permanent (static, overhead) VMS and Portable VMS
- **Genetec**
  - Traffic video surveillance and CCTV control software
  - Camera manipulation (Pan/Tilt/Zoom)

OpenReach

- NJDOT's primary traffic management and data entry software.
- Database for capturing all traffic incident and event details.
- Regional system used by partner agencies
- Used by operators to record (input), review, and update all incidents and events occurring on NJDOT roads, as well as review events on roads operated by the partner agencies.
- Seamlessly transfers incident and event data to NJDOT's 511 phone and web systems.
- Provides additional functionality such as viewing cameras, monitoring VMS, and producing performance and management reports.

Genetec

- NJDOT's primary CCTV and statewide camera control software.
- This software connects operators to hundreds of cameras for viewing and pan, tilt, zoom camera control functionality.
- This software also provides TMC operators with monitor grid layouts for viewing multiple cameras of interest at once on workstation monitors.
- Video management software for accessing and reviewing archived video

Vanguard

- NJDOT's primary VMS sign control software.
- Creating, editing, saving, previewing, posting, monitoring, and deleting messages to and from the hundreds of VMS out on the NJDOT roads.
- The software handles many different sign types and models.
- It is used for checking sign status and running device diagnostics.
- The software logs all user actions sent to the signs from the software.

Secondary Software Systems

- Real-time highway speed mapping tools
  - Current travel speed by highway link (segment) in real time
  - Displayed on a map with different colors indicating speed variation
  - Additional useful features
- EL-15 database (CDU database and SSP dispatch)
- Interactive Detour Route Mapping (IDRuM)
- Weather Systems
  - Real-time weather
  - Radar and Forecast weather information

Real-time Travel Speed Data Maps

- Electronic maps that provide indication of color-coded prevailing travel speed on street maps.
- Useful in monitoring traffic conditions, detecting and verifying incidents and events on NJDOT roads.
- The use of more than one speed map seem redundant, but can help in confirming incidents and providing more complete roadway (network) coverage.

Real-time Travel Speed Data Maps

- INRIX
- Regional Integrated Transportation Information System (RITIS)/Vehicle Probe Project (VPP) Suite
- TRANSCOM DFE Map in OpenReach
- BlueTOAD

INRIX

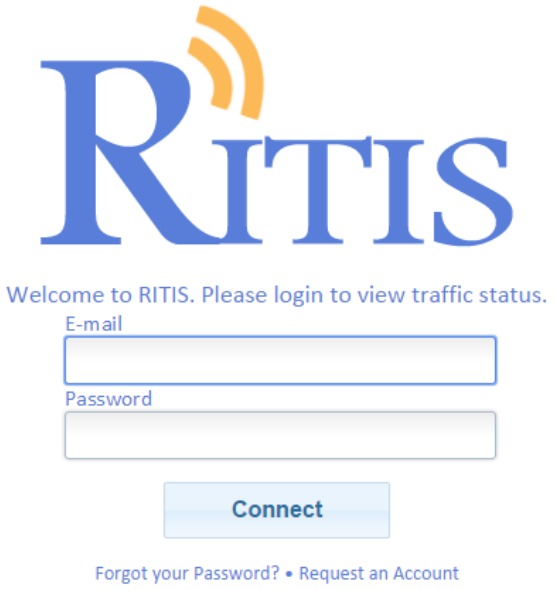
- Data provided as part of the I-95 Vehicle Probe Project
- Provides users access to current and historical traffic.
- Provides continuous coverage of the I-95 corridor from New Jersey through Florida as well as coverage of limited access roads in New Jersey.
- http://i95.inrix.com
- Provides continuous coverage of the I-95 corridor from New Jersey through Florida as well as coverage of limited access roads in New Jersey.

TRANSCOM DFE Map in OpenReach

- Functionality can be accessed through OpenReach.
- Covers the entire NY/NJ/CT region.
- Combines various speed data sources (INRIX, HERE, TrafficCast, BlueTooth, Transmit).
- Data includes link speeds, and provides tools to determine travel time information with average speeds.
- Contains a map based link speed tool as well as a Link Viewer that can be used to build different link sets.

Regional Integrated Transportation Information System (RITIS) / Vehicle Probe Project (VPP) Suite

- TMC operators have access to this automated data sharing, dissemination, and archiving system.
- Tools can be used for mapping congestion and identifying bottlenecks on the transportation network.
- Provides a variety of services including visual analytics and performance measures.
- https://www.ritis.org/



BlueTOAD (TrafficCast)

- Web-based system for viewing and managing the Bluetooth travel time detectors deployed around the state.
- Operators use this tool to see device location, their status, and reported data.
- Provides speed maps with colored lines that show current speed as it relates to the speed limit. Clicking on these lines provides more details including a 48-hour chart showing speed and travel time information.

EL-15 Database

- Operators use this database to monitor CDU logs.
- The database is separated into three regions (North, Central, and South).
- Operators use this database and the CDU radio to learn about different situations occurring on the roadways and whether a TMC operational response is needed.
  - Date and time of event
  - Type of event
  - Route
  - Route direction
  - Mile post
- Monitor status of Safety Service Patrol team members.

Interactive Detour Route Mapping (IDRuM)

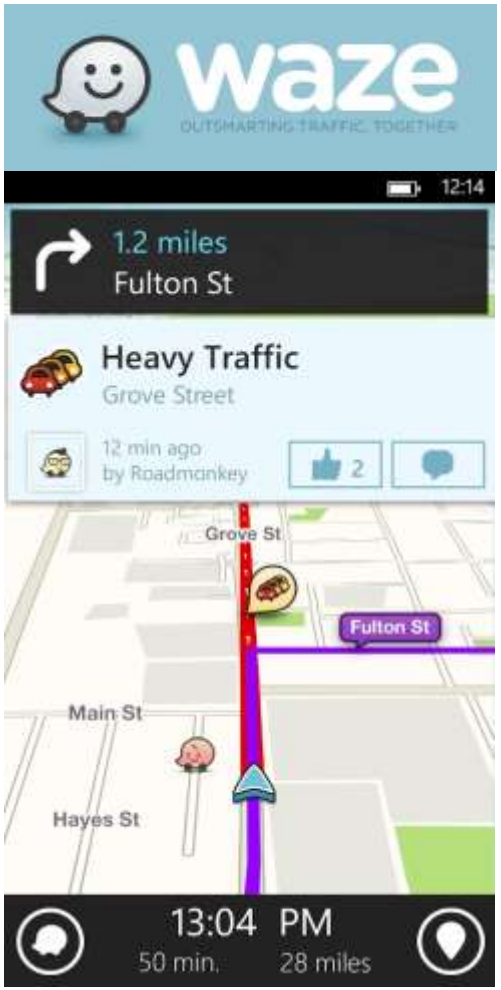
- This web-based tool provides NJDOT detour route maps for segments of roadways in New Jersey.
- If there is a road closure, the detour route maps available in the interactive tool have been approved as a potential detour route for traffic.
- Goal of this tool is to have interactive detour mapping of all of New Jersey's major routes mapped by county
- www.dvrpc.org

Weather Systems Tools

- Road Weather Information Stations (RWIS)
  - NJDOT has deployed stand alone road weather stations that collect and measure the weather and surface temperatures.
  - RWIS stations are outfitted with cameras
  - Weather stations feed data back to a central server that makes the data available through a web browser (log-in required).
  - Provide current weather information regarding temperature and precipitation, as well as other weather data.
- MxVision WeatherSentry
  - A subscription service available to TMC operators for viewing weather information.
  - Provides radar information feeds as well as detailed forecasts.

Other Support Tools

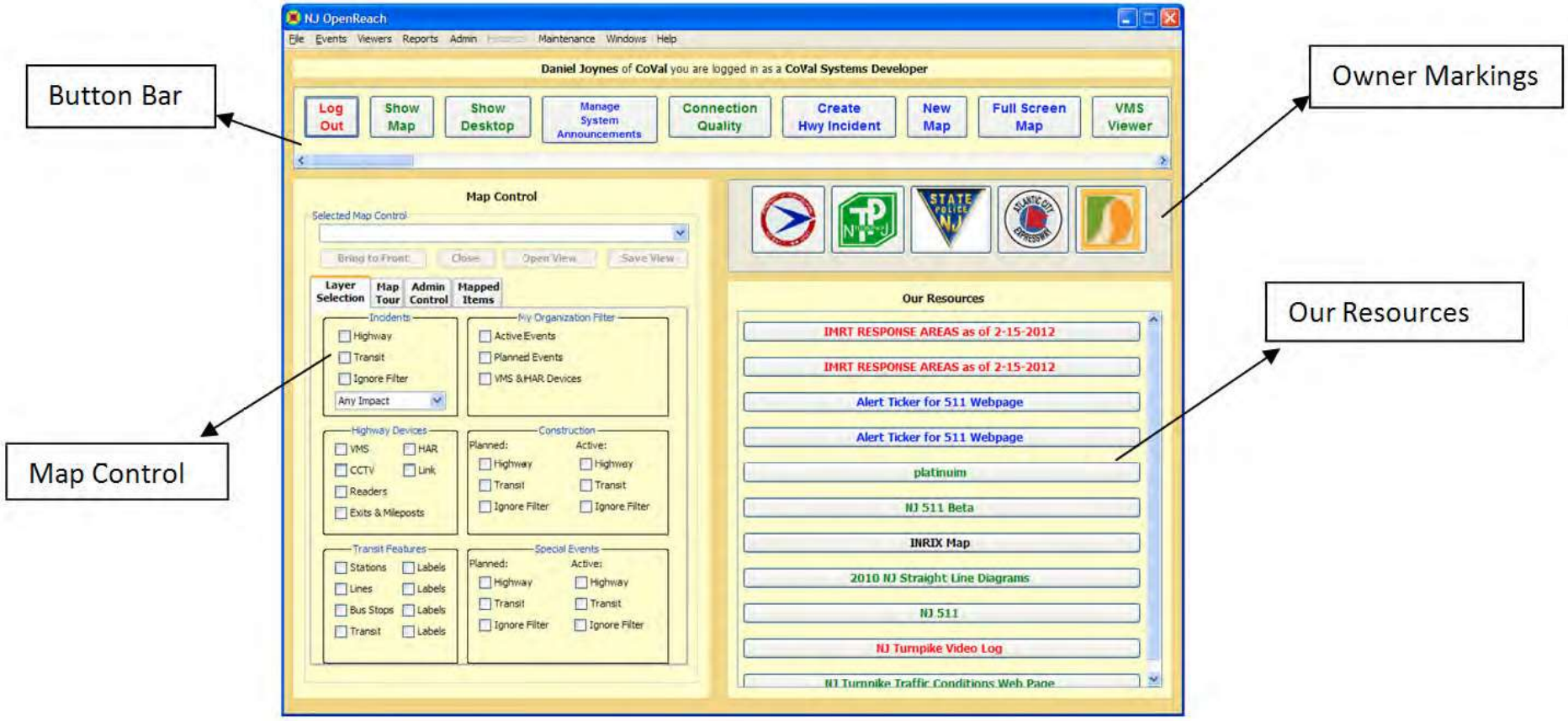
- WAZE
  - Crowdsourcing web tool that provides information on traffic conditions and incident.
- Google maps
- Bing maps
- DOT Intranet
- Total Traffic



Getting Started

- Understanding the tools that are at your disposal is important to being a fully capable member of the operations staff.
- In addition to the technology that is available through the computer at the operator workstation, it is also important to ensure that the operator knows what equipment is available in the field.
- Highway cameras and VMS for the most part stay in one place. Knowing where they are is an important element of an efficient traffic management and incident response.

OpenReach Home Page

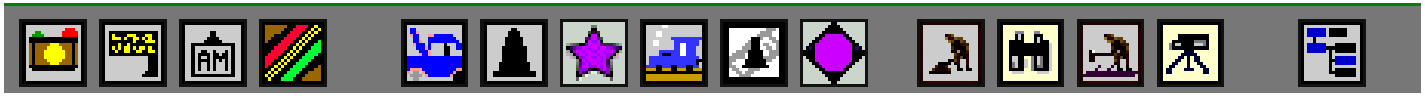


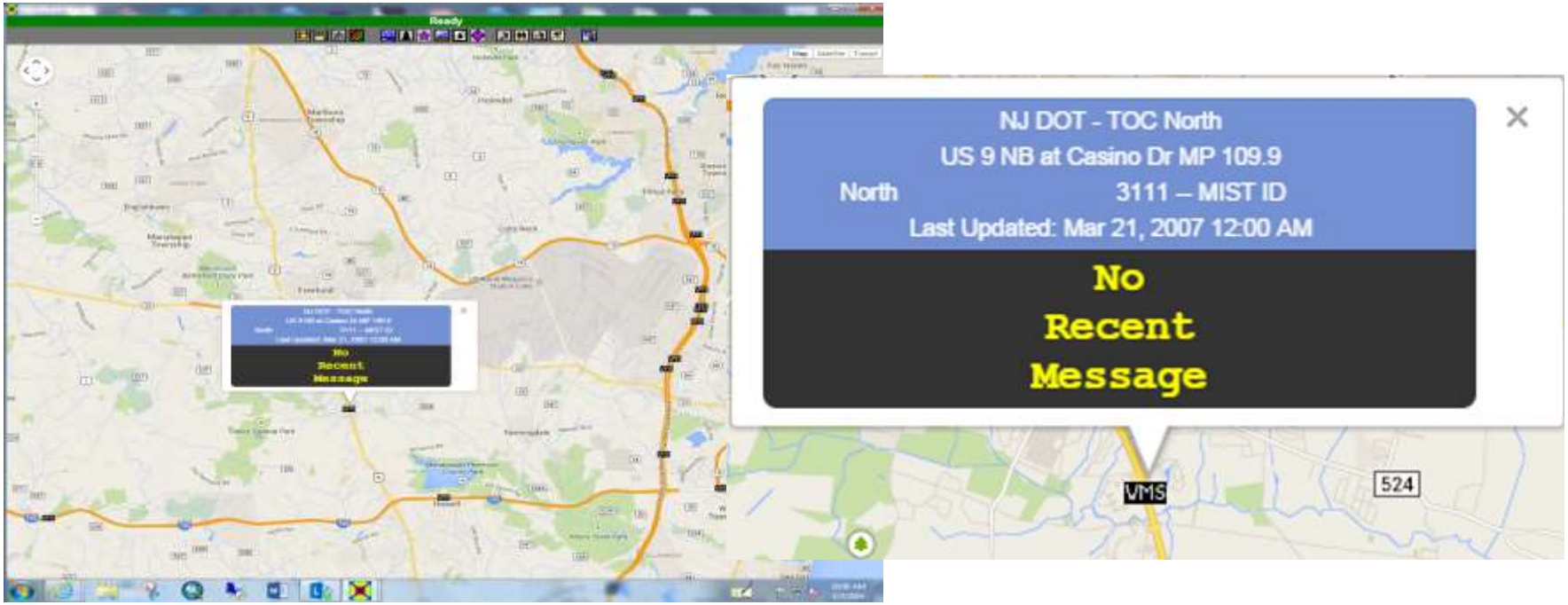
OpenReach for Equipment Location Discovery

- New Map button in OpenReach
  - All CCTV and VMS equipment locations
- There are over 350 CCTV
  - Over 200 in the north
  - Over 150 in the south
- There are over 150 VMS
  - Over 100 in the north
  - Over 60 in the south

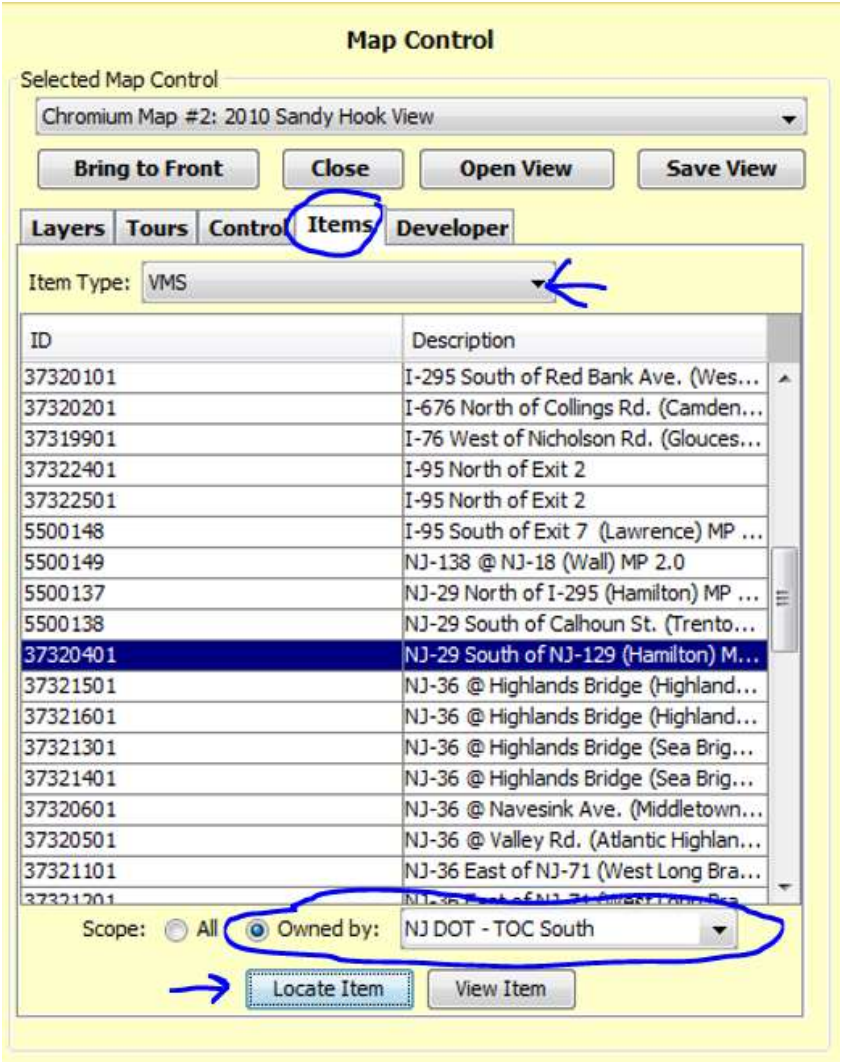
OpenReach for Equipment Location Discovery

- New Map button in OpenReach
  - All CCTV and VMS equipment locations





OpenReach Map Controls



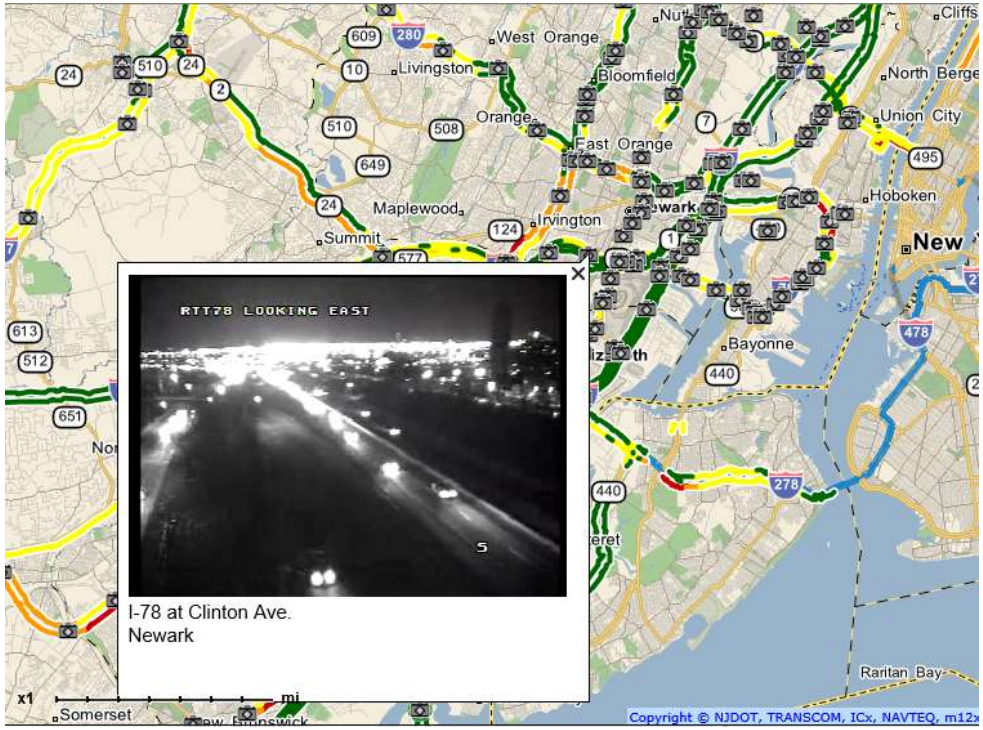
OpenReach Map Demonstration

- New Map
- Map Control

511 Traffic Map for Equipment Location Discovery

- **511nj.org/trafficmap.aspx**

- Another tool that TMC operators can use when identifying the locations of different cameras
- The 511 site also provides live traffic speed data



511 Traffic Map Demonstration

- Camera Layer
- Live Traffic Speed Layer

Controlling the Field Equipment

- Each piece of field equipment has a feedback to the TMC
- The feed goes to an equipment control software that the TMC operators use every day in their job.
- The equipment control software provide an operator the ability to disseminate safety messages to roads all over New Jersey and to view the road network they are responsible for all from the floor of the TMC.

CCTV Control Software

Genetec

- Statewide camera control head end software system.
- TMC operators have full control of NJDOT cameras using this software.
- NJTA cameras can only be viewed by TMC operators. Operators cannot control them.
  - NJ Turnpike Authority cameras
    - Garden State Parkway
    - NJ Turnpike
- PANYNJ cameras also available for viewing

Genetec Live Viewer

CCTV Control Software

- Navigation pane
  - Cameras are grouped by owner and then by road
  - Entity Search Tool
- Camera PTZ (dome cameras)
  - Full onscreen control panel
  - Quick PTZ toolbar
- Setup camera layout grids on monitor
  - Configure camera groups in different video layouts

CCTV Control Software

- Live Viewer
  - Full Screen Mode
  - Full Screen Video Mode
- Using Multiple Screens
  - Configure for displaying video grids on computer monitors

CCTV Control Software

- Recorded video archives
  - Recorded video is retained for 7 days
  - Review **OB1002C** – NJDOT's Video Camera Operations Policy
- When a camera captures an incident or event on the camera an operator is to leave camera zoomed out or turn camera from incident; in some cases a supervisor will block image from leaving Genetec software.
  - Camera continues recording
  - If camera is not blocked, camera image continues to be passed to OpenReach, 511, and other partners

CCTV Control Software Demonstration

- Camera search and camera tree
- Live view
- Camera PTZ
- Camera presets/Home
- Monitor camera grids
- Video Archive
- Camera positioning

OpenReach CCTV Camera Viewing

- CCTV viewer
  - Enables an operator to search out any camera by owner and then by camera name
- New Map
  - This been discussed, it provides all the regional cameras on a map
- Video wall
  - Provides operators access to pre-made video grids with transitions for select areas of the region determined on a state level as an important group of cameras to monitor.

CCTV Camera Viewing Demonstration

- CCTV viewer
- New Map
- Video wall

Student Activity

1. Find a camera in Genetec, then find it on OpenReach map
2. Find camera on 511 web page, then find it in Genetec
3. In Genetec PTZ control a camera and use presets and return it to home position
4. In Genetec create a monitor video grid
5. In OpenReach locate a NY owned camera

VMS Control Software

- NJDOT electronic signboards or Variable Message Signs (VMS)
  - On permanent overhead or roadside fixture
  - Portable VMS
- Control software connects to signs and allows the operators to:
  - Send messages
  - Blank messages
  - Send message schedules
    - Planned event message schedules
    - Travel time message schedules

Portable and Permanent VMS

- Portable VMS

- Permanent VMS

VMS Control Software

- Approved VMS Messages Types
  - Blank signs
  - Traffic incidents
  - Construction and maintenance activities
  - Emergency messages
  - Special events
  - Adverse weather and roadway conditions
  - Advanced notification of future roadwork or special events
  - Travel times
  - Safety campaigns
  - Test messages

Vanguard

DAKTRONICS

VMS Message Parameters – MUTCD Guidance

- NJDOT follows the MUTCD guidelines for posting messages to VMS on roadways.

Question	Answer	Number of Information Units
What happened?	MAJOR CRASH	1
Where?	AT EXIT 12	1
Who is the advisory for?	Drivers Heading TO NEW YORK	1
What is advised?	USE ROUTE 46	1

Note: The following is an example of a two-phase message that could be developed from the four information units shown in this table:

Phase 1	Phase 2
MAJOR CRASH AT EXIT 12	USE ROUTE 46 TO NEW YORK

http://mutcd.fhwa.dot.gov/htm/2009/part2/part2l.htm

VMS Message Parameters – MUTCD Guidance

- The minimum time that an individual phase is displayed should be based on 1 second per word or 2 seconds per unit of information, whichever produces a lesser value. The display time for a phase should never be less than 2 seconds.
- The maximum cycle time of a two-phase message should1 be 8 seconds.
- The duration between the display of two phases should not exceed 0.3 seconds.
- No more than three units of information should be displayed on a phase of a message.
- No more than four units of information should be in a message when the traffic operating speeds are 35 mph or more.
- No more than five units of information should be in a message when the traffic operating speeds are less than 35 mph.
- Only one unit of information should appear on each line of the CMS.
- Compatible units of information should be displayed on the same message phase.
  - http://mutcd.fhwa.dot.gov/htm/2009/part2/part2l.htm

VMS Message Parameters – MUTCD Guidance

- Sign format

VMS Message Parameters – MUTCD Guidance

- MUTCD acceptable abbreviations

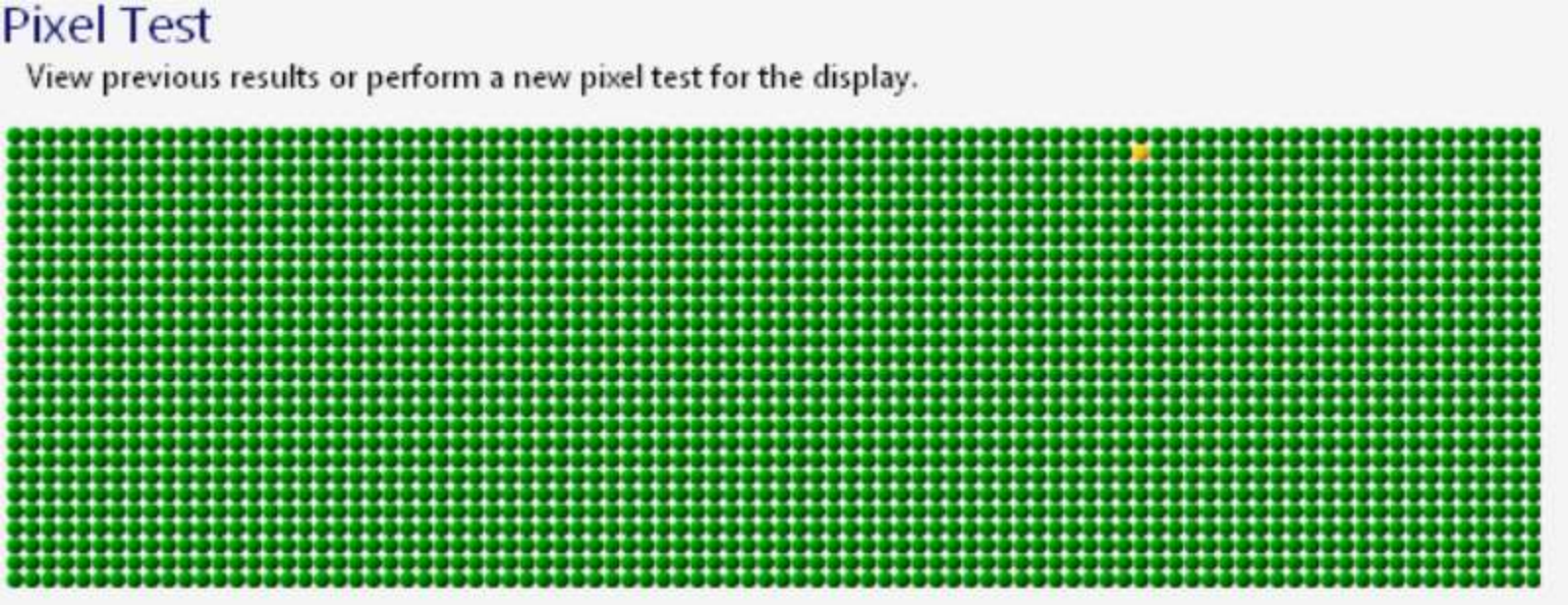
Acceptable Abbreviations	
Word Message	**Standard Abbreviation**
Afternoon / Evening	PM
Alternate	ALT
East	E
Friday	FRI
Hazardous Material	HAZMAT
High Occupancy Vehicle	HOV
Information	INFO
Junction / Intersection	JCT
Monday	MON
Morning / Late Night	AM
North	N
Saturday	SAT
South	S
Sunday	SUN
Thursday	THURS
Tuesday	TUES
Wednesday	WED
Morning / Late Night	AM

VMS Control Software

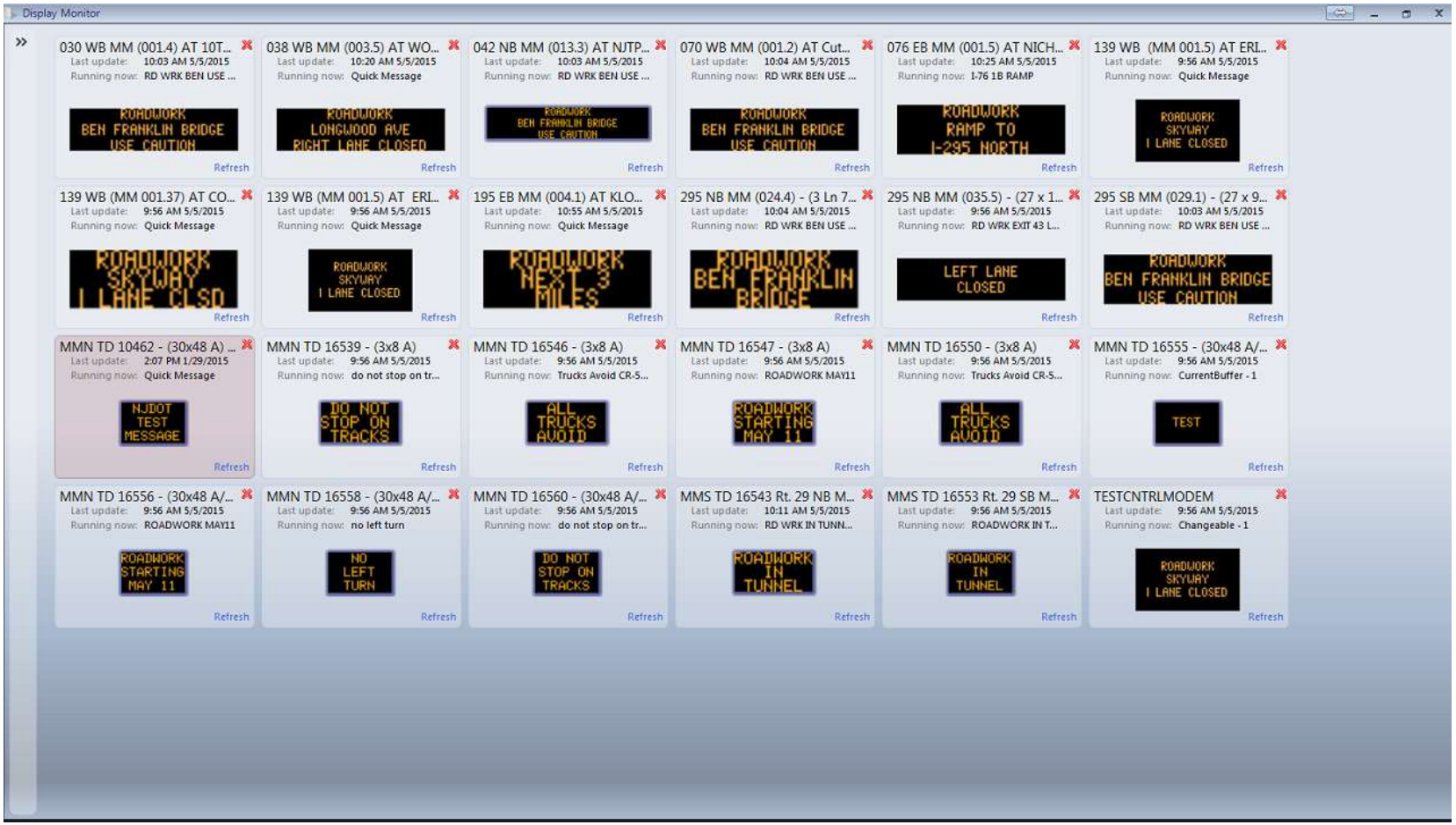
- Creating safety messages
  - Quick – created for quick and efficient posting, usually for incidents
  - Stored – created for planned events

VMS Control Software

- VMS Diagnostics
  - Pixel Test



Display Manager



VMS Control Software Demonstration

- Review different sign types and how the effects message length
- Review sending single message vs. grouped message
- Review button control options in ribbon
- Create and send a quick message
- Create, save, and send a library message
- Run a pixel test

Signs for Planned Construction Events

- Preparing and posting signs for highway construction planned events:
  - Verify there is no already planned roadwork in this area at the same time
  - Identify applicable signs
  - Create sign messages by sign types
  - Save to libraries

Planned Construction Event Demonstration

- Review construction handout
- Run a coordination report in OpenReach
- Verify work has not already been entered into systems
- Identify field equipment that can be used to support the event

Student Activity

1. Find a sign on OpenReach map, then find it in Vanguard software
2. Create a traffic incident sign (quick message)
3. Create a roadwork sign (message library)
4. Run a pixel test

OpenReach Incident and Event Documentation

- Sort incident list by column headers
- Sort highway construction list by column headers

OpenReach Incident and Event Documentation

OpenReach Highway Event Panel List – Column Headers

- **Facility**: displays at which place or roadway the Event is located.
- **Type**: displays which Type of Event each Event is considered to be.
- **Last Change**: displays the time and date of the last Update of each Event, if no Updates have been made, the time of creation, or, if the Event was closed and no other Updates have been made since, the time of Closing.

OpenReach Incident and Event Documentation

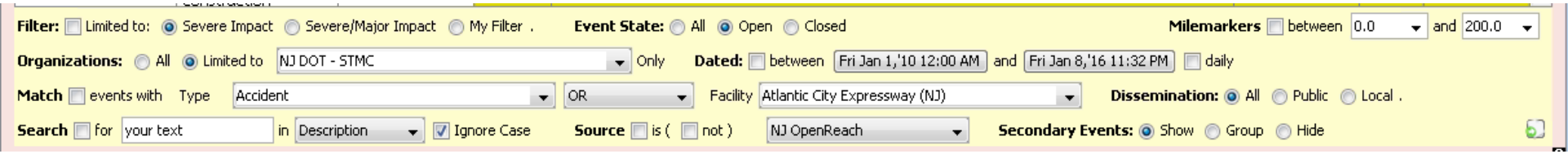
OpenReach Highway Event Panel List – Column Headers

- **Impact**: displays the severity of the Event's impact.
- **Details**: provides a short description of each Event; hovering over the description will open a tooltip with the description.
- **State, County**: displays the State and County in which an Event is located.
- **Mile Post**: displays the Mile marker at which the Event is occurring.
- **Relationship**: Shows if this event is a ***parent*** or ***child*** of another event.

OpenReach Incident and Event Documentation

OpenReach Highway Event Panel List

- To sort for a very specific incident a TMC operator can filter events with the following criteria
  - Severity
  - Event State
  - Organization
  - Date
  - Type
  - Facility
  - Secondary events



OpenReach Incident and Event List Documentation Demonstration

- Highway Incident sorting
- Highway Construction sorting

Incident and Event Documentation

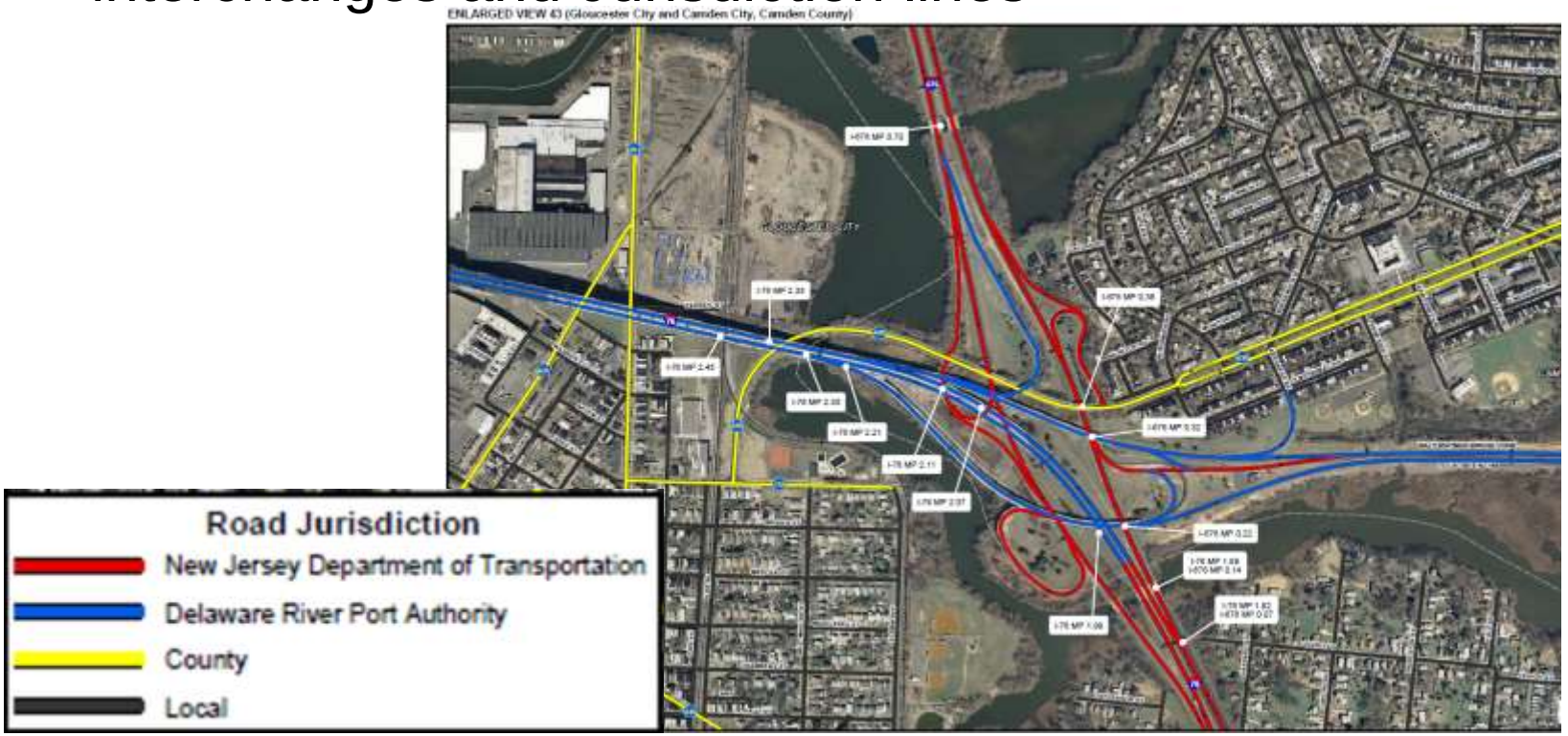
- Straight Line Diagrams
  - This tool will assist you in determining mile marker/mile posts if you have crossroad information

Incident and Event Documentation

- Mile Markers in New Jersey
  - North/South Roads
    - Mile Markers count up going North
    - Mile Markers count down going South
  - East/West Roads
    - Mile Markers count up going East
    - Mile Markers count down going West

Incident and Event Documentation

- Straight Line Diagrams can be used to view interchanges and Jurisdiction lines



Straight Line Diagram Incident and Event Documentation Demonstration

- Straight Line Diagrams

Incident and Event Documentation

OpenReach Data Entry

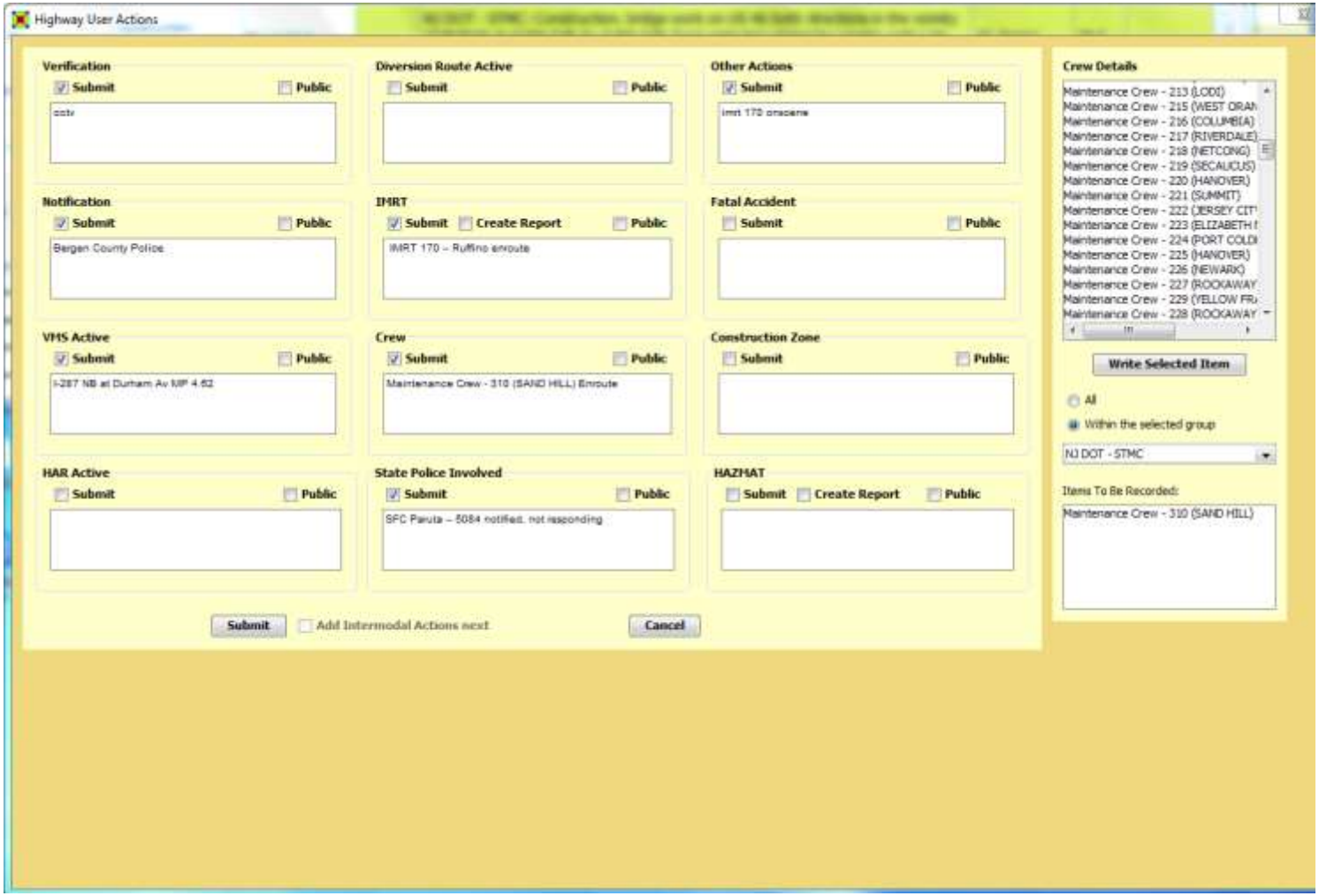
- Highway Incident
- Weather Event
- Amber Alert
- Silver Alert
- Special Event
- Highway Construction Event
  - One and done
  - Recurring schedule

Incident and Event Documentation

OpenReach Data Entry

- Add User Actions
  - An Incident or event can have User Actions associated with it. These actions include:
    - IMRT
    - Crew
    - State Police
    - Other (ITS equipment used)
    - Construction Zone

Example User Action Page



Incident and Event Documentation

OpenReach Data Entry

- Email Distribution **per OB5005C**
- Update an event
  - From Highway Event Panel List
  - From Highway Construction List

OpenReach Incident and Event Documentation Demonstration

- Create highway incident
- Create weather event
- Create Amber Alert
- Create Special Event
- Create highway construction
- Add User Actions
- Email Distribution
- Update/Close Incident and Event

Student Activity

1. Provide an example road and crossroad. Using any resources available have the student identify what town or county road location is, then use the straight line diagram to determine what mile marker the crossroad is located.

2. Create an incident in OpenReach at that location that has User Actions including - IMRT on scene, identify what ITS equipment could be used, Maintenance dispatched

3. Prepare an email message for distribution

Information Dissemination

NJ 511 Phone and Web

- **511NJ** is a free phone and web service that consolidates traffic and transportation information into a one-stop resource for commuters and motorists in the Garden State. 511NJ provides up-to-the-minute traffic conditions and it's available seven days a week, 365 days a year.
- Traffic and travel information offered on the **511NJ** web site and telephone phone service is managed by a partnership of public agencies led by the New Jersey Department of Transportation, the New Jersey Turnpike Authority, the South Jersey Transportation Authority, the New Jersey State Police, the Port Authority of New York and New Jersey, the Delaware River Joint Toll Bridge Commission and the Delaware River Port Authority.

Information Dissemination

Manually Posting a Severity Alert onto the 511 webpage

There are 6 elements to each alert

1. Message – Actual content of alert (what is posted on NJ511 webpage).
2. URL – Web address to provide more detailed information, if available.
3. Start – Date and Time for the alert to become active (visible) on the NJ511 webpage.
4. End – Date and Time for the alert to become inactive (clears) on the NJ511 webpage
5. Priority – Importance of alert in comparison to the rest of the alerts.
6. Active – Make sure it becomes visible on the NJ511 webpage.

Information Dissemination Demonstration

- Dial 511 Phone
- Review 511 Web
- 511 Web Severity Alerts

Student Activity

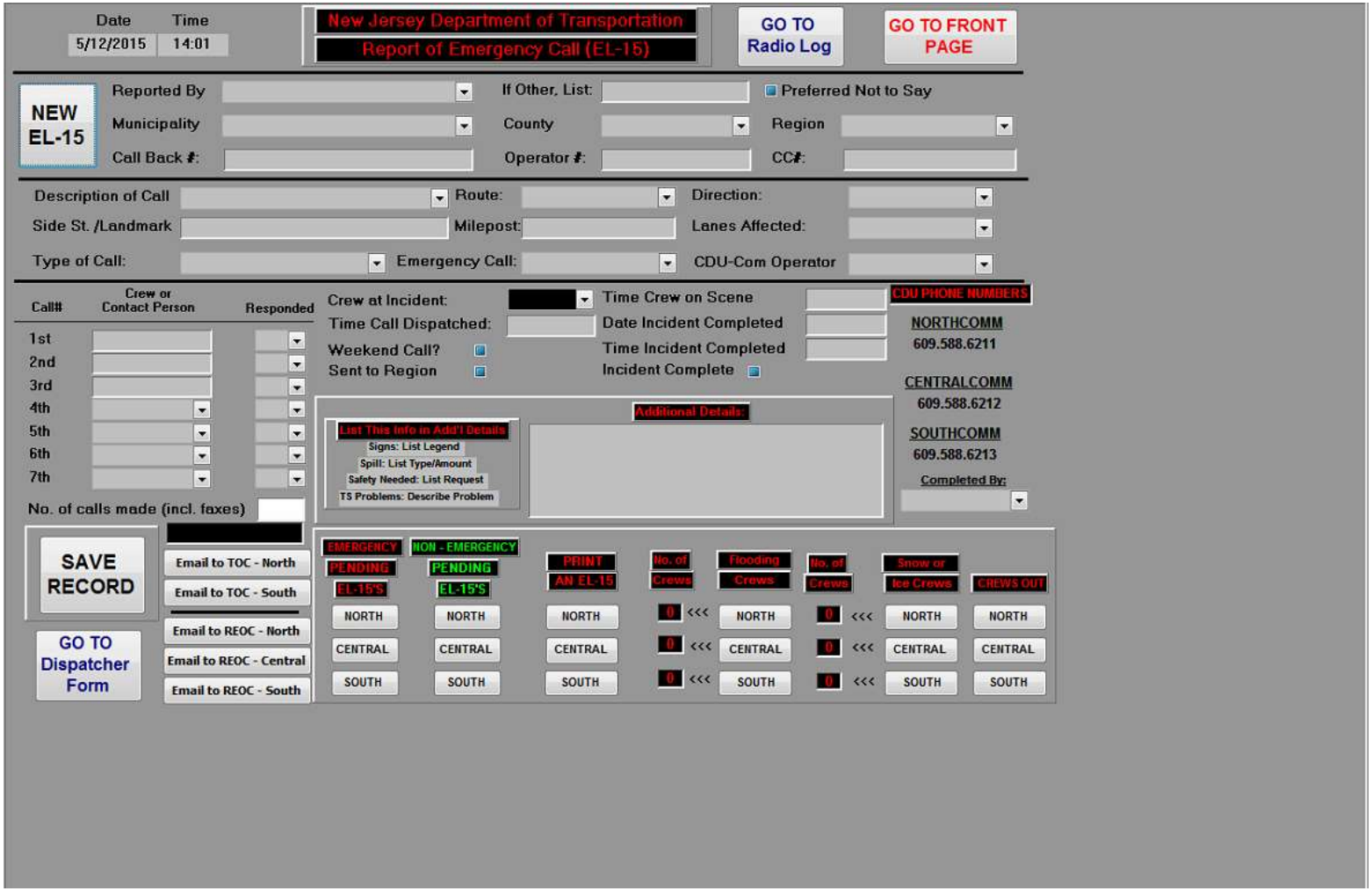
1. Dial 511
2. Use voice command shortcuts.
3. Listen to audio for incident messages.

CDU Dispatch Database

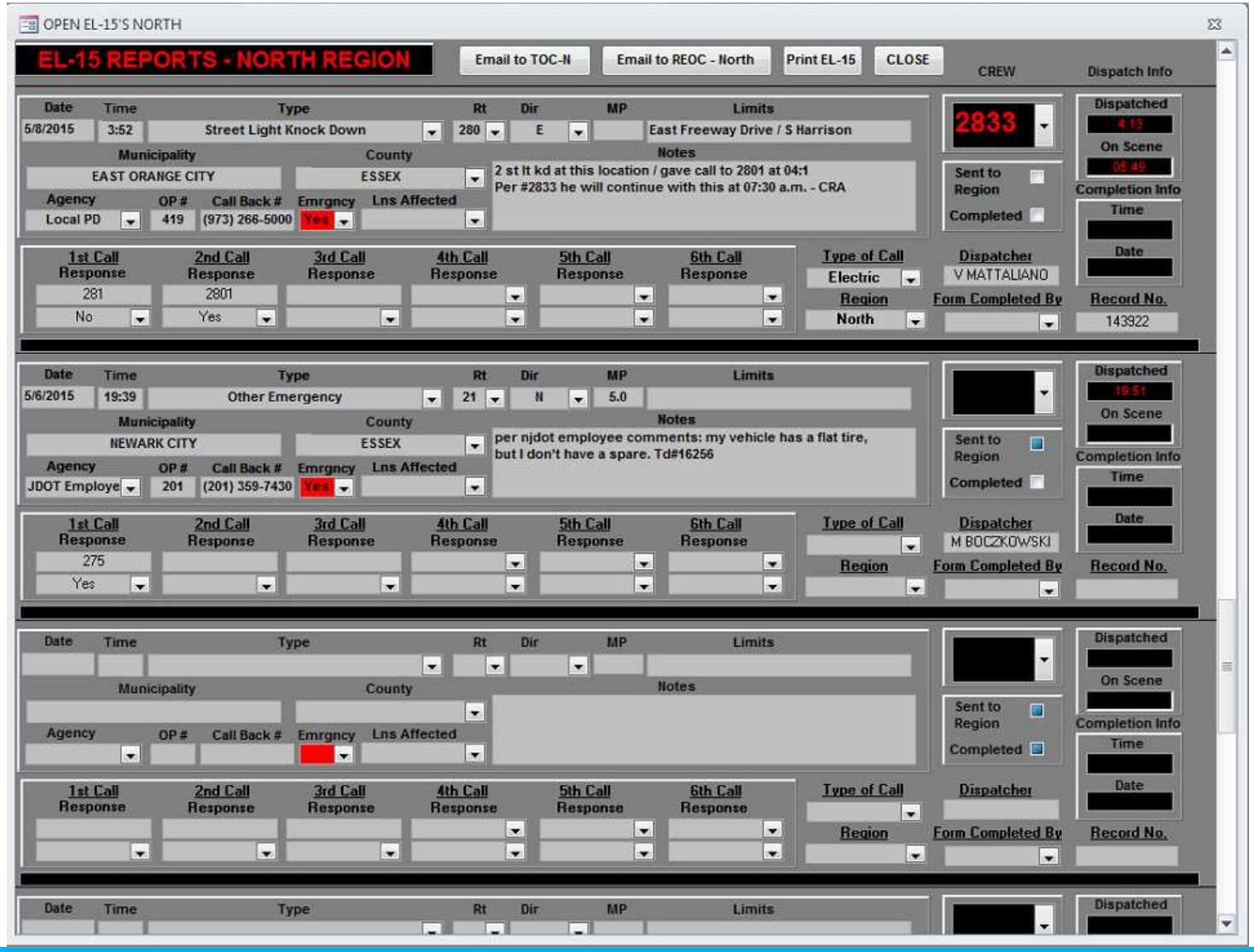
EL-15 Database

- The Central Dispatch Unit Database is used for monitoring entries made by the CDU based on the calls they have received
- The database is broken into 3 regions, north, central, and south
- TMC operators will use this database and the CDU radio logs to learn about different situations occurring on the roadways and the status of those incidents
- A TMC operator can monitor this database and view details of the CDU record including Date, time, type of event, Route, Route direction, mile marker for each emergency log entry, as well as who has been dispatched and if they are on scene
- Using these details the TMC operator can determine if TMC operation response is needed. And can view statuses of Safety Service Patrol team members to understand if they are available or still responding to highway events.

EL-15 Database



EL-15 Database (North)



CDU Dispatch Database

CDU Dispatch Regions:

CDU Dispatch Database Demonstration

- Review Emergency Records
- Monitor SSP

Speed Maps

INRIX

- The INRIX travel speed data is provided as part of the I-95 Vehicle Probe Project.
- The I-95 Traffic Monitoring site provides users access to maps showing current traffic conditions, as well as archived (historical) traffic data.
- Layers can be toggled on and off to show just interstates highways, all highways, or arterials.
- There are controls for identifying congestion information and speed information as well as toggling on alerts related to incidents and construction.

Speed Maps

TRANSCOM DFE Map

- TRANSCOM provides a Data Fusion Engine for the entire NY/NJ/CT region
- This engine combines TRANSMIT data with private information service provider and other traffic data
- The data includes link speed data, and provides tools to determine travel time information with average speeds
- There is a map based link speed tool as well as a Link Viewer that can be used to build different link sets

Speed Maps

BlueTOAD

- This is a web-based vendor provided system for viewing and managing the bluetooth travel time detectors deployed around the state.
- The web-based tool provides operators the ability to view device lists with device details and location.
- Provides a speed map with colored lines that show current speed as it related to the speed limit. Clicking on the lines provides more details including a 48 hour chart showing speed and travel time information.

Speed Maps Demonstration

- Inrix
- TRANSCOM Data Fusion Engine
- BlueTOAD

IDRuM Diversionary Route Tool

- Interactive Detour Route Mapping
  - Identify route, route segment
  - PDF files containing detour information
- Identify county of interest (if no diversionary routes in system, county will be grayed out)

IDRuM Diversionary Route Tool Demonstration

- IDRuM

Weather Systems

Road Weather Information Systems (RWIS)

A RWIS is comprised of Environmental Sensor Stations (ESS) in the field, a communication system for data transfer, and central systems to collect field data from numerous ESS. These stations measure atmospheric, pavement and/or water level conditions. Central RWIS hardware and software are used to process observations from ESS to develop nowcasts or forecasts, and display or disseminate road weather information in a format that can be easily interpreted by a manager. RWIS data are used by road operators and maintainers to support decision making.

http://www.ops.fhwa.dot.gov/weather/faq.htm

Weather Systems

- MxVision Weather Sentry subscription
  - Top-rated weather information delivered via the Web
  - Provides SOAP or REST services
  - Hourly and daily forecasts for the 15-day outlook, with associated actual observations available
  - Available hourly and daily parameters include those common to energy operations and planning, such as temperature values, heat index, humidity, wind characteristics, precipitation type and amount, barometric pressure, and many others
  - Provides parameters not available from free sources , such as heating degree days and cooling degree days, irradiance, evapotranspiration, and others
  - Climatological (normal) data also available for North American locations

http://www.schneider-electric.com/products/ww/en/5100-software/5190-weather-decision-support-solutions/61689-mxvision-weathersentry-web-services/

Weather Systems Demonstration

- RWIS
- MxVision Weather

Regional Integrated Transportation Information System (RITIS)

- TMC operators have access to this automated data sharing, dissemination, and archiving system
- This tool provides a variety of services including visual analytics and performance measures
- TMC operators can use this tool for mapping congestion and identifying bottlenecks on the transportation network

Regional Integrated Transportation Information System (RITIS)

- RITIS incident list
  - All New Jersey events from OpenReach
- Traffic Map
  - Vehicle speed probe data (Inrix, Navteq, TomTom)
    - Smooth data
  - Incidents and events from OpenReach
- Regional Explorer
- Dashboard

The Regional Integrated Transportation Information System (RITIS)

- There are three main RITIS components including
  - Real-time data feeds,
  - Real-time situational awareness tools, and
  - Archived data analysis tools (VPP Suite).
- An online tool, accessed through an internet portal
  - Requires username and password
  - Access through NJDOT's membership in the I-95 Corridor Coalition

Getting Access & User Instruction

- Sign up for the account through RITIS homepage:

  https://vpp.ritis.org/

- Instructional Tools

  - Screencasts (instructional videos)

    https://vpp.ritis.org/suite/screencast/

  - VPP Online Help Documentation

    https://vpp.ritis.org/suite/help/

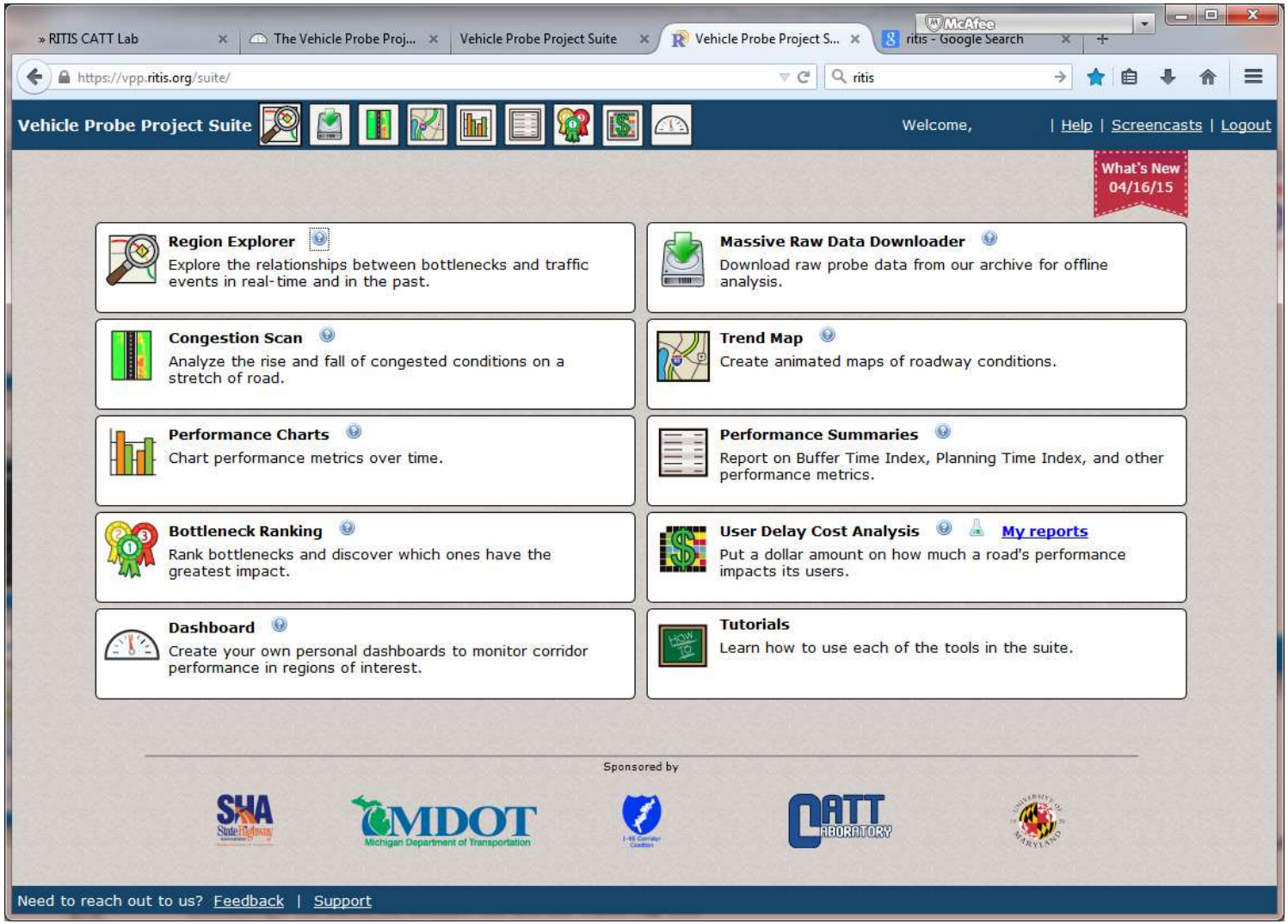
RITIS/VPP Suite Features & Tools

- RITIS Real-Time Situational Awareness Tools
  - Traffic Map and Incident Overview List
- VPP Suite
  - Region Explorer
  - Dashboard

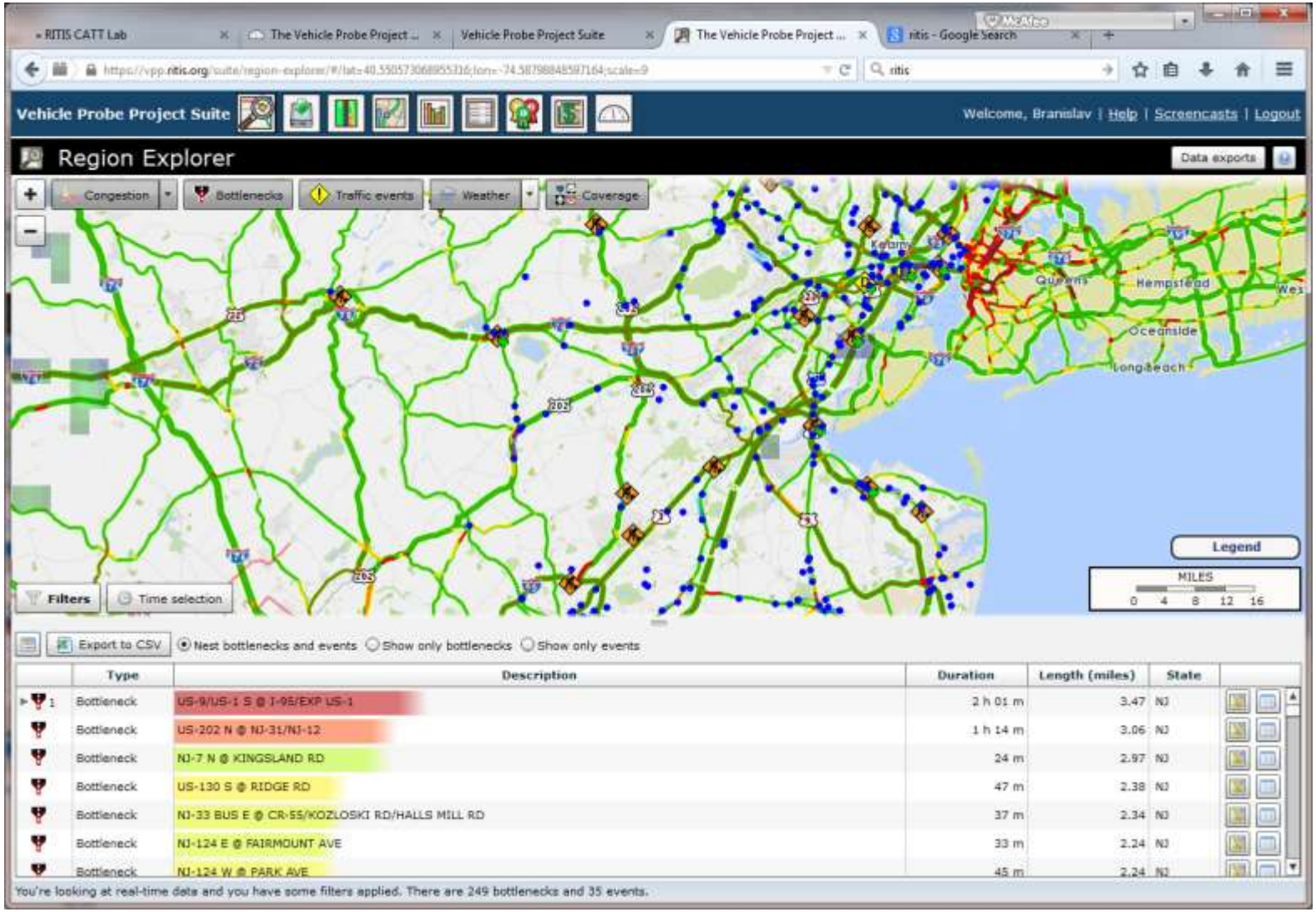
Getting Access to RITIS – Demo

RITIS Real-Time Situational Awareness

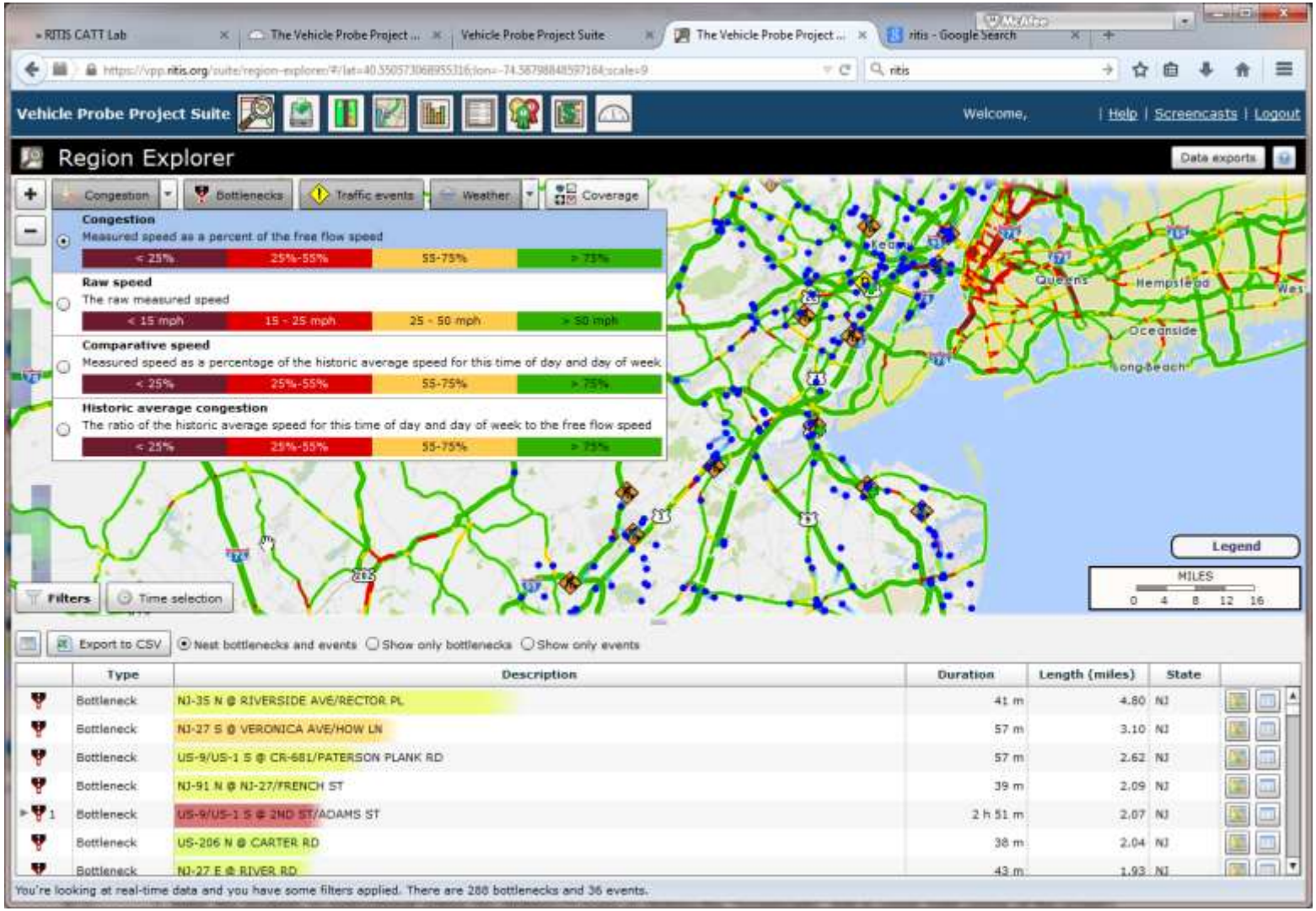
Accessing VPP Suite



VPP Suite Region Explorer – Demo

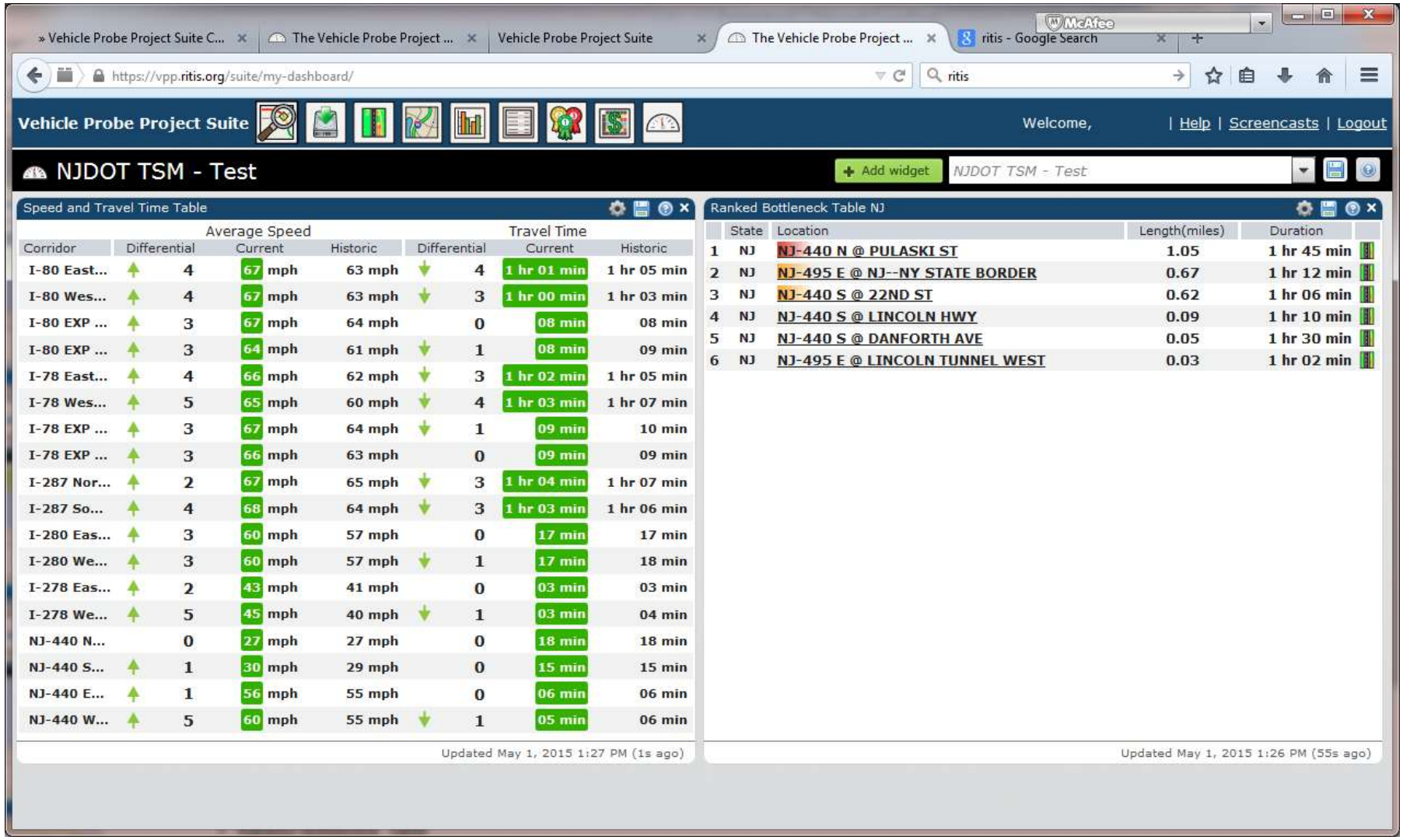


Region Explorer Map Features – Demo



Region Explorer Event List Features – Demo

VPP Dashboard – Demo



Regional Integrated Transportation Information System (RITIS) Demonstration

- RITIS

Important points to note

- Understand what resources you have available to help you provide the most accurate and timely information you can.
- Understand the requirements for logging incident information and archiving data.
- Understand the tools you have available to you often change, but that the steps you have to take to ensure that you are recording good data does not. Software systems and technology are continually evolving and improving the capabilities and efficiency of a TMC operator.

Module 7 Learning Checks

- Did you become aware of the basic software systems used in the TMC?
- Do you understand all the TMC software systems used specifically for the purpose of incident management including the specific functions they perform?
- Did you gain a basic hands-on experience in using all the relevant software systems?

MODULE 8

PRACTICAL EXERCISE

Scenario #1

Three vehicles are driving East along I-195 near Exit 6: one car, one SUV, and a tanker truck carrying gasoline. The SUV sideswipes the truck, hits the divider, and is stopped along the right shoulder. The overturned truck blocks part of the right lane. There is a potential for a leak in the gasoline container of the tank truck.

Scenario #2

Due to a snow event there is four-vehicle accident on Route I-78 East by Exit 52 involving a car, motorcycle, a truck carrying propane, and an SUV. The truck driver's leg is trapped as a result of his truck overturning and is also complaining about pain in his chest and shortness of breath.

MODULE 9

COURSE REVIEW AND NEXT STEPS

Trainee Feedback

- Review course expectations
- Are there any topics that you feel you need more information?
- Were the training materials effective?
- Any comments/suggestions regarding the course?

On-the-Job Training

- Provide On-the-Job practical training as an extension of this course
- This will be achieved by:
  - The trainee spending 2 weeks on the TMC floor (normally during the hours of 8:00 AM – 4:00 PM).
  - The trainee shadowing existing operators in all daily activities and applying concepts and skills obtained during this course.
- At the conclusion of the On-the-Job training, trainees will assume the role of a TMC operator and are expected to perform the duties.

Important Notes

- Maintain course materials for future reference, including software quick guides, OBs, and course lecture notes.
- Become familiar with any updates of OBs and other documents outlining procedures and guidelines for TMC operators as they get issued.
- Don’t hesitate to ask for advice or help from your more experienced fellow operators.

State of New Jersey
DEPARTMENT OF TRANSPORTATION

TMC OPERATOR TRAINING COURSE

Statewide Traffic Management Center (STMC), Woodbridge
Traffic Operations Center (TOC) South, Cherry Hill

vhb

NJIT New Jersey's Science & Technology University

RUTGERS Center for Advanced Infrastructure and Transportation